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THE SAGINAW COURIER.

No 89

THE SAGINAW VALLEY.

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TWENTY-FIFTH ANNUAL REVIEW

OF THE

SAGINAW COURIER,

SHOWING THE

Lumber, Shingle * *

AND

* * Salt Product

IN DETAIL.

COMMERCIAL AND MANUFACTURING INTERESTS,

AND

General Trade Results.

FOR 1888,
WITH COMPARISONS.

COMPILED BY
E. D. COWLES.

COURIER PRINTING AND BINDING CO., EAST SAGINAW, MICH.

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Proprietors Railroad Feed Mill.

COR. WASHINGTON AVE. AND TUSCOLA STREET,

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TWENTY-FIFTH ANNUAL REVIEW

OF

The Saginaw Courier,

SHOWING THE

LUMBER, SHINGLE AND SALT PRODUCT

IN DETAIL

OF THE SAGINAW VALLEY.

Commercial and Manufacturing Interests, and

General Trade Results for 1888.

EAST SAGINAW, MICH.
COURIER PRINTING AND BINDING CO.

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PREFACE.

IN conformity to its usual custom, inaugurated twenty-five years ago, THE COURIER presents herewith a review of the industries, commerce and business of the Saginaw Valley for 1888. The present review is more comprehensive than that of last year, which was confined to the lumber, salt and auxiliary interests. The object sought is an exhibit of what has been accomplished in the growth and development of the Valley, the magnitude of the commerce and manufactures, and to acquaint people residing elsewhere of our unrivaled resources and advantages both as a place of residence and for the development of manufactures, and general business.

In presenting the work to the public, it is admitted that some delay has resulted, as is always the case in a work of this character, owing to the difficulty in obtaining the necessary information as promptly as desired. In many instances business firms and corporations are unwilling to furnish figures until after the close of the year.

The public is assured that the aim has been to carefully embody in these pages the public spirit, progress and development of the material resources of the section under review. No enterprise of importance, either corporate or personal, affecting the trade relations of the Valley with other localities, has been willingly omitted; and it is believed none have been.

The facts and figures dealt with are the result of personal research, or have been furnished by competent authorities. It is not claimed for the work absolute perfection, but it is believed it generalizes a mass of information regarding the Saginaw Valley that will be found valuable to all interested in its development, as a matter of reference. With this hasty explanation the work is commended to the careful perusal of the intelligent reader.

DEC 19 1923

THE SAGINAW VALLEY.

IN many respects the Saginaw Valley is the most highly favored section of country in the United States. The climate is salubrious, it is free from destructive storms in summer and blizzards in winter that fret and imperil the denizens of other localities, the soil is fertile, producing in great abundance all the fruits, grains and vegetables grown in the temperate zone; it is singularly favorably located for manufacturing enterprises, being drained by navigable streams that empty into the Saginaw Bay, and thence into one of the great inland seas, affording ample facilities for water connection with all points on the great lakes; and it is also provided with a network of railways connecting it with all points in the United States and Canada. Free schools and churches abound; there is an abundance of forest resources, and in fact all the concomitants of advanced civilization. In addition to the foregoing advantages briefly outlined, but which will be more fully set forth in this work, it is the base of supplies of the entire northeastern portion of the state, as well as the largest lumber and salt producing area in the world.

It has been well said that "great cities are not accidents." They are the result of adequate, well-defined causes. Geographical position is one of the most potent natural forces in the creation of a metropolis. That position must be where deep water navigation on the one hand and of land transportation on the other are certain to converge and meet. To this must be added fertility of surrounding country and cheap transit for the commodities of the soil and manufactures, backed by the natural resources which form the basis of large industries. These advantages the cities of the Saginaw Valley enjoy to an eminent degree, and supported as they are by the intelligence, untiring vigilance and aggressive enterprise of the population, the causes which have made us what we are, and which promise a great destiny, are apparent.

In an address delivered before the Saginaw Farmers' Institute in 1877, Hon. W. L. Webber, speaking of the Saginaw Valley, said: "Its extreme length north and south is something over 125 miles; its extreme breadth about 120 miles. That portion of it, the waters of which drain through the Saginaw Valley proper, comprises about 170 townships, as per government survey, over 6,000 square miles, and over 4,000,000 acres." And again he said: "I doubt if there can be found in the state of Michigan six thousand square miles of territory in one body with greater agricultural capacity than the six thousand miles drained by the Saginaw and its tributaries. More than one-half of this territory for agricultural purposes is the very cream of Michigan, and there is but little comparatively but what will make good farming land, and you will find the average production per acre of this Valley is fully equal to the average of any portion of the state. Wheat, corn, barley and rye are grown here in perfection. For fruits the climate is well adapted to apples, pears, plums and small fruits, while for vegetables no other portion of the state can compete with it."

Forests of hard and soft timber of the best quality, surround the Valley, and extend for hundreds of miles, and in all directions penetrated by lines of railroads, rendering these varied and valuable natural resources and raw materials easily accessible at low cost for manufacturing purposes. At Bay Port on the one side and Flushing on the other, there is an inexhaustible supply of excellent stone for building purposes, while the development of coal beds discovered in Tuscola and Genesee counties, now in progress, will add a new element to the commercial importance, manufactures and wealth of the Saginaw Valley.

In taking a retrospective glance at the rise and progress of the Valley cities, and the wonderful development of the region of country embraced in the term, Saginaw Valley, the reader cannot but be struck with the wonderful growth of these interests. Not yet have all the hardy pioneers passed from the stage of action, neither have all reached the point where they may be termed "old men," who first settled in the region now teeming with busy thousands, whose annual retrospective glance at what has been accomplished, strikes their own minds with no less satisfaction and surprise, than that excited in the minds of strangers.

As we look upon the hundreds of manufactories which now continue to give to the Saginaw Valley and the adjacent country so enviable a reputation for energy and enterprise as well as wealth, a reputation confined not to our own state, but as widely spread as our national boundaries, it is a matter of congratulation to trace it from its humble beginning, through the years of feebleness, to its present development. About the year 1818 a treaty was made with the Chippewa Indians by which the territory, now known as the Saginaw Valley, was ceded to the United States. For the succeeding twelve years but few settlers turned their attention to what was then but a wilderness, inhabited by semi-friendly savages, with whom a trade in whisky was the most profitable employment, that commodity being in request among them in exchange for the furs, which they had learned to be of value to the whites. The first saw mill erected in the Valley was built by Gardner D. and E. S. Williams, at Saginaw City, in 1832, and was run by the machinery which had been used to propel the "Walk in the Water," the first steamboat which navigated the waters of the great lakes. This mill supplied the lumber which was requisite to build the houses and buildings of the early settlers. The first shipment of lumber from the Saginaw Valley was made in 1835, but not until eighteen years after, or in 1853, had the manufacture reached an extent worthy of notice. From that time forward, as will be seen, the business has rapidly developed to its present enormous proportions.

The manufacture of salt was commenced in 1860, 4,000 barrels being produced that year, since which the development in that industry has been phenomenal, exceeding in the Saginaw Valley two million five hundred thousand barrels annually.

Saginaw river is formed by the junction of the Tittabawassee, the Cass, the Flint and the Shiawassee Rivers, having a total length of about 18 miles. The streams which unite to form the Saginaw, taken together, give over 1,500 miles of river navigation, valuable for the floatage of logs, lumber, timber and other products. There has been floated to date out of the streams named more than 9,800,000,000 feet of pine logs, besides hundreds of millions of feet of pine lumber and other products. There are upon the Saginaw River over 80 lumber and shingle mills, having an annual capacity of 1,000,000,000 feet of lumber, and nearly 100 salt blocks producing annually nearly 2,500,000 barrels of salt. The Valley also produces timber, staves, hoops, etc., while the shipments of lumber products by rail exceed 300,000,000 feet annually, and of salt, nearly 600,000 barrels.

GREAT STAPLES OF THE VALLEY.

THE great staple productions of the Saginaw Valley are lumber, lath, shingles and salt.

The first saw mill in the Valley, as stated, was built at Saginaw City during the year 1832, by Gardner D. Williams & Bro., for the purpose of supplying the early settlers with materials for building, the shipment of lumber from the Valley, as an article of commerce, not being dreamed of. At that time the Valley and adjacent territory was covered with dense forests. The solemn stillness of the dark pine woods had not as yet been profaned by the lumberman's axe, the prow of lake craft were comparative strangers to these waters, the plow had not reveled in the bosom of mother earth; in fact in view of civilization the immense domain was almost a solitude, and its grand resources yet to reach development.

During 1835 Curtis Emerson, one of the eccentric characters of the early day, erected a saw mill near the present site of the East Saginaw gas works. It was considered a model mill of the kind. It contained three upright saws, one edging table and butting saw, having a capacity of 3,000,000 feet in a single season. The first lumber shipment was made from this mill in 1836. The Emerson mill was destroyed by fire in 1863. From the year 1835 the manufacture of lumber began to attract a little attention, and a few scattering mills of small capacity were erected. The financial panic following 1836, however, checked further development for some years, and it was not until late in the forties that much activity was noted. About 1849 several mills were erected and Saginaw lumber became an article of commerce. Thence forward rapid progress was made. In 1857 there were forty-four mills in operation on the Saginaw, Tittabawassee, Cass and Bad Rivers. At that time the Saginaw district contained what was considered the largest and most valuable tract of white pine timber in the United States, if not in the world, while there was an abundance of Norway, hemlock, and hardwoods of all kinds. The cork pine of the Saginaw Valley, straight grained and free from pitch, has never been surpassed. In 1861 a quantity of deals were shipped to Quebec, and the Montreal Gazette of that date remarked: "The deals that have reached Quebec this season from the district of country known as the Saginaw Valley, in Michigan, are allowed to be the best quality that has been placed on the market." White pine timber has been shipped from the Saginaw Valley into nearly every State in the Union, to England, France, Australia, South America, and many other foreign lands. and everywhere its excellence is conceded.

While the sources of supply are gradually diminishing, the end will not be reached for many years, and other sources of supply are furnishing contributions. And when the pine is gone there is almost an inexhaustible supply of hardwoods that will be utilized. The lumber production in the Saginaw Valley has increased from 92,000,000 feet in 1851 to its present enormous proportions.

Steps were first taken to develop the saline resources of Michigan in 1838, when the State Geologist, Douglas Houghton, was authorized by the Legislature to commence boring for salt as soon as practicable, at one or more of the salt springs of the State, the location to be selected by himself. He selected one spot in the southeast corner of section 24, town 15, north of range 1 west, on the west bank of the Tittabawassee River, a short distance below the mouth of the Salt, one of its tributaries, ten miles above the present site of Midland. The State appropriated $3,000 to defray the expenses incident to the undertaking, and work was commenced about the middle of June, 1838. The enterprise proved more laborious and expensive than had been expected. During the remainder of that year there had been expended $2,118.67 on the work. The shaft was begun on the bank of the river, and it was proposed to sink it to the rock estimated to lie at a depth of something like 100 feet and to secure it carefully from the influx of fresh water. The salt rock, which was thought to lie at this point at a depth of between 500 and 700 feet, was then to be reached in the usual manner. Until this was accomplished no satisfactory conclusion could be hoped to be arrived at on the subject. In his report dated January 6, 1846, he says the indications at the shaft are such as to give hope of eventual success. On January 5, 1842, he reported that the shaft had only reached a depth of 130 feet, as the result of nine months' continuous work in consequence of the character of the material passed through in sinking the iron tubes. He reported confidence, but looked for no beneficial results until a depth of 700 feet was reached. But notwithstanding his confidence, shared in by others, when the appropriation was exhausted, it was thought best by the Legislature to abandon this shaft, at least until some future period, owing to the great expense and the distance from a base of supplies. The confidence of Dr. Houghton and those, who by intercourse with him, had acquired a degree of his ideas and enthusiasm, was not lessened in the existence of a salt basin in the Saginaw Valley and its ultimate development. It was his opinion that the center of the basin would be found at or near the mouth of the Tittabawassee River, about two miles above the present site of East Saginaw, and that a shaft had only to be sunk to the depth of from 600 to 1,000 feet to find strong brine at any point in this vicinity. The salt question remained in abeyance from this time until 1859, when a bill was introduced in the Legislature to appropriate $10,000 to aid in developing the salt springs in the Grand River Valley.

As soon as the pendency of the bill was known in East Saginaw a public meeting was called, and the unjust discrimination in favor of Grand Rapids was bitterly complained of. It was thought that the chances of success at Saginaw were at least equal to Grand Rapids. The meeting was held at the office of Chas. B. Mott, on the 26th of January, 1859. Here again was confidence expressed in the opinion of Dr. Houghton, but as a large outlay was necessary, and it was a matter of general interest, it was decided to apply to the Legislature for encouragement. A committee consisting of Hon. Norman Little, Morgan L. Gage, Dr. Geo. A. Lathrop and Wm. L. Webber was appointed to draft a petition to that body. The committee believing the Legislature would more readily encourage the enterprise by a bounty contingent on the success of the experiment than by direct appropriation, proposed a bill on that principle. The result was that the bill to appropriate $10,000 for Grand Rapids was laid aside, and this bill with a few amendments was passed and approved February 15, 1859. It exempted all property used in the business from taxation and provided for the payment of a bounty of ten cents per bushel on all salt made, (provided always that none was made.) This stimulated the business of salt making, and while the people of Grand Rapids were disappointed somewhat in the failure of the bill giving them the appropriation, the inducement held out led them to make an effort simultaneously almost with the Saginaws. The Grand Rapids well was commenced August 12, 1859, and finished October 14, of the same year. It was sunk 259 feet. An analysis of the brine showed such a small percentage of chloride of sodium (salt) that the manufacture of salt in paying quantities was never seriously considered.

In the meantime the Saginaw people had not been idle, and on the 30th of March, 1859, a subscription book was opened for the formation of a corporation for the manufacture of salt, the company to be called the "East Saginaw Salt Manufacturing Company," to have a capital of $50,000, to consist of 2,000 shares. In two days the entire amount was subscribed. Dr. Geo. A. Lathrop was President, W. L. P. Little Treasurer, and W. L. Webber Secretary. On the 16th of April, 1859, the articles of association were signed and the sinking of the first well commenced in that year, the boring reached the saturated sandstone at a depth of 633 feet, the well reaching a total depth of 647 feet. It was not until February 7th, 1860, that a report was made by the Board of Directors to the stockholders. In this they said they had withheld the facts from time to time, but were now "happy to assure them that Saginaw possesses salt water second in strength and purity, and, they believed in quantity, to none in the United States.

The company at once ordered the sinking of another well and increased their stock to $250,000. The two blocks were completed and the boiling of salt commenced the latter part of June, but no salt was packed until July, 1860.

This was the inauguration of the production of salt in the Saginaw Valley, the pioneer in Michigan in that respect.

The result of this experiment led to the formation of other companies, and the Saginaw salt making rapidly developed into a giant industry. A report states that 50 years of progress in the manufacture of salt in the Kanawha Valley, Virginia, did not equal the progress made in the Saginaw Valley in four years, and 42 years at the Onondaga salt springs, then the leading salt producing locality in the United States, did not equal the progress made here in five years. The shipment of Saginaw salt to Chicago for 1864, the "fifth year of manufacture," was 343,887 barrels, an excess of 120,887 barrels over the entire receipts of domestic salt in that market for 1860, and 12,115 barrels more than were received there during 1866 from the Onondaga Company.

The amount of salt manufactured has steadily increased and the area is also extending, while the mode of manufacture has materially changed. Nearly, if not all, of the early blocks have gone to decay, others have been dismantled and are now out of existence or commission, but the work of improvement has been gradually going on. Works that have hitherto turned out 10,000 to 20,000 barrels now produce 40,000 to 100,000, on account of improvements and betterfacilities.

In cheapness of production the Saginaw salt industry leads the world. The blocks are (with few exceptions) connected with saw mills, and the vast accumulation of refuse from the manufacture of lumber, that at other lumbering points in the state requires an enormous expenditure to remove, is here profitably utilized in the manufacture of salt, the cheapest and best fuel in the world for this purpose. The old kettle block is a thing of the past, pan and steam blocks having taken their place.

The manufacture of salt was commenced at the Onondaga salt springs, in the state of New York, June 20, 1797. There was manufactured the first year, 5,095 barrels and 41 years later the production had only reached 433,455 barrels.

At Kanawha, Virginia, salt was manufactured as early as 1804, and 56 years later the production had reached only 700,000 barrels.

The extent of the production in the Saginaw Valley and state is shown in detail elsewhere in these pages.

LUMBER STATISTICS.

THE Saginaw Valley has been for many years prolific in statistics regarding the lumbering industry. The publication of the statistics of the lumber, shingles and salt products of the Saginaw Valley was inaugurated by Geo. F. Lewis, editor of THE SAGINAW WEEKLY COURIER in 1863, and their publication has been continued by this paper since that date. In 1865 Hon. W. R. Burt also compiled a statement for the Saginaw Enterprise, and in 1866 a statement was prepared by T. B. Fox, now publisher of the Rochester, (Mich.) Era. In 1867 Geo. F. Lewis was joined by C. B. Headley in the publication of annual reviews which was continued by them under the auspices of THE COURIER several years. In 1873 the author of this work, who had compiled the product at the lower end of the river four years, took hold of the work for the entire Valley, and has continued the publication of annual reviews to the present time, Geo. F. Lewis being associated with him a number of years following 1873. That worthy gentleman, the nestor of the Saginaw Valley Press, is still publisher of the Saginawian, a weekly paper at Saginaw City, and is also postmaster of that city. In the review of 1867, referring to the Valley, Mr. Lewis says: "We do but speak the words of truth and soberness, without a shade of egotism or vain glory when we say that within the district of which we write is the largest and most valuable body of pine territory, the most wide spread and ample reservoir of saline waters, while as auxiliary items, in the deposit of coal, river and coast fisheries, the oak, elm, hemlock, maple and other varie-

GEO. F. LEWIS, THE PIONEER LUMBER STATISTICIAN.

ties of timber, and better than all these, for permanent wealth and prosperity, the immense tracts of farming lands as fruitful and genial as any in similar latitude under the sun, but just sufficiently developed to make their value and availability unquestionable, we have an array that must effectually put to rest all cavil concerning the future greatness and prosperity of this favored section."

The inexorable logic of events has verified the statement of Mr. Lewis in every particular. The lumber product of the Valley in 1867, the date of the quotation from the pen of Mr. Lewis, was 423,963,190 feet, and since 1869 the product each year has exceeded 500,000,000 feet, reaching the enormous aggregate of 1,011,274,905 feet in 1882; the shingle production has ranged from 90,000,000 to 304,000,000 annually, and the lath output from 48,000,000 to 127,000,000 pieces each year; while the salt output, which was inaugurated in 1860 with a total of 4,000 barrels, has reached over 2,000,000 barrels for this Valley in a single year.

The most arduous duty connected with a compilation of lumber statistics is that of collecting reports. Printed blanks are mailed to each manufacturer, and to their credit in most instances prompt returns are made. Those who are dilatory possibly do not comprehend the value of such reports to the business and manufacturing interests of the Valley and State.

LUMBER OUTPUT.

THE output of the Saginaw River mills has for a long period of years exceeded that of any like area, and 1888 was no exception. In fact the production was greater than that of the three preceding years. The largest output since 1851 was in the years 1880, 873,047,731 feet; 1881, 976,320,317 feet; 1882, 1,011,274,905 feet; 1883, 938,675,078 feet; 1884, 978,497,853 feet, and 1888, 880,669,440 feet. The mills, during the season of 1888, were fairly well supplied with logs, and in nearly every instance the cut of each was increased as compared with the preceding year. No labor troubles disturbed the harmonious relations existing between employer and employee, 10 hours was the running time except in cases where mills were operated day and night, and wages ruled the same as in 1887.

Three saw mills were burned as follows: A. D. Camp, East Saginaw, May 1, loss $11,000; insurance $6,000. Green & Stevens, Bay City, Nov. 13, loss $25,000; insurnace $23,000. L. L. Hotchkiss & Co. West Bay City, Dec. 6, loss $75,000; insurance $50,000. The shingle mill of E. Andrews, at Saginaw City, burned November 3, loss $5,500; insurance $3,500. Total losses $116,500; insurance $82,500. The shingle mill of J. H Freeney, at East Saginaw, was destroyed by boiler explosion in September, involving a loss of $8,000.

The detailed statement shows that there were operated on the Saginaw River during the season of 1888, 90 saw and shingle mills, producing 880,669,440 feet of lumber and 267,224,000 shingles. The quantity of lumber manufactured in 1887 was 783,661,264 feet and of shingles 196,983,000.

At the close of the manufacturing season of 1888 there was piled on the mill docks 361,283,062 feet of lumber, of which 70,498,651 feet was reported sold for next season's delivery.

The latter figures, however, do not represent the actual amount of lumber on the docks December 1 that was sold for future delivery. A number of mills saw for other parties, hence the manufacturers who furnish the report of the cut, etc., were unable to state what, if any, stock held on dock for other parties was sold. It is within the bounds of reasonable estimate to state that of the quantity of lumber on dock December 1, 1888, sold, approximated 100.000,000 feet. It should be understood that a considerable quantity of the stock on dock at that date will be handled in the car trade, and is therefore out of the cargo market for another season.

At the close of the season there was on hand 58,249,750 shingles, a considerable portion of which will be handled in the car trade.

The lumber output is divided as follows:

The Saginaws, feet	402,578,559
Bay City, etc., feet	478,190,881
Total	880,669,440

ON HAND AT CLOSE.

The Saginaws, feet	191,634,116
Bay City, etc., feet	170,248,946
Total	361,883,062

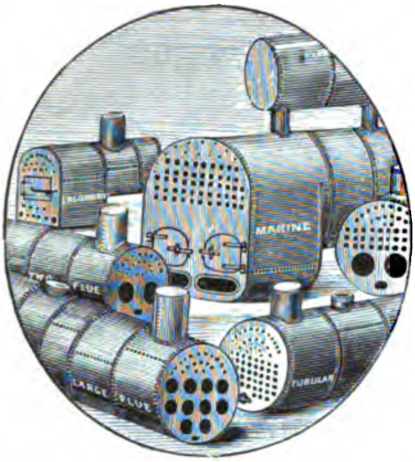
SHINGLE OUTPUT.

The Saginaws	159,249,500
Bay City, etc	107,974,500
Total	267,224,000

ON HAND.

The Saginaws	40,463,500
Bay City, etc	17,777,250
Total	58,240,750

The manufacturing season commenced about May 1, and practically closed December 1, a few mills only continuing in operation after that date:



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Lumber Output of the Saginaw River Mills for 1888.

The Saginaws, Etc.	LUMBER, FT. MF'D.	ON HAND DEC. 1. FT.
Green, Ring & Co	16,850,000	10,170,000
Eaton, Potter & Co	9,700,000	4,950,000
Merrill & Ring	17,600,000	7,000,000
N. & A. Barnard Lumber Co	16,960,000	13,300,000
Briggs & Cooper	5,850,000	3,000,000
Geo. F. Williams & Bro	8,200,000	5,000,000
Sample & Camp	9,600,000	6,150,000
West Side Lumber Co	14,646,000	9,032,000
A. W. Wright Lumber Co	26,962,618	3,834,830
C. K. Eddy & Son	19,153,267	10,182,500
C. Merrill & Co	21,201,678	12,013,000
C. S. Bliss & Co	8,000,000	3,201.155
E. F. Gould	7,350.000	5,500,000
A. T. Bliss & Bro	14,200,000	8,500,000
Sanborn & Hill	6,000,000	1,500,000
Stevens & LaDue	7,900,000	3,500,000
C. L. Grant & Co	5,223.000	2,390,000
J. W. & E. S. Bliss	12,200,000	9,000,000
Rust, Eaton & Co	14,172,836	3,470,000
Mitchell & McClure	22,400,000	7,450,000
Whitney & Batchelor.	26,500,000	10,000,000
Rust Bros. & Co	12,445,000	5,000,000
G. B. & S. L. Wiggins	5,000,000	3,000,000
Gebhart & Estabrook	16,000,000	12,020,000
A. D. Camp, mill burned May 1	80,000	100,000
Nelson Holland	15,700,000	4,547,000
Warner & Eastman	10,000,000	2,000,000
Chas. Lee	1,250,000	1,000,000
Brown & Ryan	27,231.158	9,503,622
Saginaw Lumber & Salt Co	17,350,000	13,000,000
James Patterson	6,253,000	2,030,000
Soper & Co	600,000	200,000
Total	402,578,559	191,634,116

Bay City, West Bay City and Essexville.	LUMBER, FT. MF'D.	ON HAND, DEC. 1, FT.
Green & Stevens, burned Nov. 13	10,000,000	3,500,000
Geo. C. Myers	7,500,000	1,900,000
Hitchcock & Bialy	8,300,000	1,800,000
Miller & Lewis	16,800,000	5,800,000
S. McLean Son & Co	16,045,640	5,861,000
L. L. Hotchkiss & Co., burned Dec. 6	25,000,000	13,000,000
E. J. Hargrave & Son	16,300,000	6,000,000
Smalleys & Co	7,000,000	1,700,000
Hine & Laderach	4,589,585	2,200,000
Miller Bros	9,500,000	6,500,000
Rust Bros. & Co	16,875,000	4,000,000
Butman & Rust	11,212,698	3,621,043
N. B. Bradley & Son	20,134,353	8,961,201
Eddy, Avery & Eddy	25,000,000	5,000,000
F. E. Bradley & Co	16,800,000	3,800,000
Edmund Hall (Detroit Mill)	16,000,000	6,500,000
Wm. Peter	22,715,298	6,109,802
Folsom & Arnold	2,000,000	9,000,000
S. G. M. Yates	16,305,000	7,038,000
Pitts & Cranage	27,000,000	10,600,000
H. W. Sage & Co	33,000,000	10,000,000
John Welch	13,000,000	5,195,000
E. Lewis & Co	5,650,000	2,500,000
Smith Bros. & Co	17,162,400	5,000,000
Carpenter & Co	13,750,000	6,500,000
Eddy Bros. & Co	19,825,000	7,390,000
Dolsen, Chapin & Co	20,185,000	8,000,000
McEwan Bros. & Co	17,090,907	8,422,000
W. B. Rouse	8,000,000	3,000,000
E. Y. Williams & Co	15,000,000	1,350,000
J. J. Kelly & Co., (Keystone mill)	2,450,000	....
Total	478,190,881	170,248,945
Total Saginaw River	880,669,440	361,883,062

COMPARISON OF THE OUTPUT.

PREVIOUS to 1851 no record of the cut of the saw mills of the Saginaw River was kept, although one writer places the cut of eleven mills in 1850 at 8,000,000 feet. The following statement, in addition to the manufactured product, includes the lumber on the mill docks at the close of each manufacturing season and that proportion of the total on hand that is reported each year December 1, as sold for future delivery.

	LUMBER, CUT, FEET.	TOTAL FT. ON DOCK DEC. 1.	ON DOCK SOLD, FT. DEC. 1.
1851	92,000,000		
1852	90,000,000		
1853	96,000,000		
1854	100,000,000		
1855	100,000,000		
1856	110,000,000		
1857	113,700,000		
1858	106,500,000		
1859	122,750,000		
1860	125,000,000		
1861	120,000,000		
1862	128,000,000		
1863	133,580,000		
1864	215,000,000		
1865	250,639,340	44,453,000	22,362,000
1866	349,767,834	44,415,700	14,211,000
1867	423,963,190	69,969'771	17,435,571
1868	451,395,225	67,401,017	13,402,990
1869	523,500,830	93,331,614	14,562,000
1870	576,726,606	130,422,190	47,862,000
1871	529,682,878	75,599,511	33,576,000
1872	602,118,980	152,822,553	40,928,200
1873	619,877,021	222,071,665	30,893,000
1874	573,632,771	213,152,663	27,135,000
1875	581,558,273	223,202,108	26,595,578
1876	583,950,771	224,546,657	30,000,000
1877	640,106,231	245,935,522	23,511,666
1878	574,162,757	247,572,383	18,640,280
1879	736,106,000	221,864,595	85,647,837
1880	873,047,731	295,870,633	92,103,596
1881	976,320,317	281,990,929	118,605,117
1882	1,011,274,905	309,079,999	105,073,000
1883	938,675,078	376,037,075	134,042,692
1884	978,497,853	458,066,848	51,550,000
1885	728,498,221	329,013,030	68,427,508
1886	798,826,224	315,029,650	59,775,100
1887	783,661,265	339,565,951	64,230,195
1888	880,669,440	361,893,062	70,498,651

C. K. EDDY & SON,

MANUFACTURERS AND DEALERS IN

GANG AND BAND SAWED

LUMBER

AT WHOLESALE BY CARGO.

ASSORTED LUMBER, ROUGH OR DRESSED,

In Car-Load Lots a Specialty.

Proprietors of the MICHIGAN DAIRY SALT CO., Manufacturers of

PURE DAIRY AND TABLE SALT.

THE BEST IN THE WORLD.

Office, Mill and Salt Works at west end Genesee Avenue bridge.
Assorting Yard at Carrollton, on F. & P. M. and M. C. Railroads.

EAST SAGINAW, MICH.

ASH, OAK, MAPLE, BASSWOOD, ETC.,

IN CAR OR CARGO LOTS.

Hardwood Lumber!

WM. W. SUTHERLAND,

Manufacturer and Wholesale Dealer.

No. 4 Hoyt Block, - EAST SAGINAW, MICH.

Yard at Flint & Pere Marquette Junction.

Shingle Output of the Saginaw River Mills for 1888.

The Saginaws.

	SHINGLES MF'D.	ON HAND DEC. 1.
Ed. Andrews	7,545,000	500,000
D. McLeod	3,000,000	2,632,000
Brand & Hardin	5,000,000	1,500,000
Wylie Bros	25,000,000	6,000,000
S. W. Tyler & Son	18,000,000	3,000,000
W. F. Stevens	9,872,000	2,000,000
J. H. Freeney	14,000,000	500,000
C. E. Ring	11,000,000	5,000,000
Melchers & Nerreter	9,500,000	....
Whittier & Co	9,900,000	3,400,000
S. & C. Stone	7,670,000	2,000,000
C. & E. TenEyck	11,269,000	3,664,000
N. & A. Barnard Lumber Co	217,000	191,000
A. W. Wright Lumber Co	11,026,500	6,501,500
A. T. Bliss & Bro	5,250,000	1,400,000
Sanborn & Hill	5,000,000	1,500,000
Stevens & LaDue	6,000,000	....
Brown & Ryan	....	475,000
James Patterson	....	200,000
Total	159,249,500	40,463,500

Bay City, West Bay City and Essexville.

	SHINGLES CUT.	ON HAND.
Miller & Lewis	5,450,000	1,123,000
F. E. Bradley & Co	3,500,000	1,500,000
Edmund Hall	4,700,000	800,000
Wm. Peter	5,594,500	2,654,250
Hargrave & Haven Co	17,456,000	....
J. R. Hall	38,774,000	700,000
Lanford & Mitchell	8,500,000	2,000,000
R. M. Bradley	8,000,000	3,000,000
Courval & Co	7,000,000	2,000,000
N. B. Bradley & Son	8,000,000	4,000,000
Total	107,974,500	17,777,250
Grand total Saginaw River	267,224,000	58,240,750

COMPARATIVE OUTPUT.

We have the figures showing the shingle production of the Saginaw River Mills from 1867 to 1888 inclusive, as follows:

	PRODUCT.		PRODUCT.
1867	90,983,000	1878	153,999,750
1868	104,104,500	1879	218,934,000
1869	119,843,500	1880	241,075,160
1870	178,570,000	1881	304,925,500
1871	187,691,000	1882	295,046,500
1872	159,001,750	1883	242,126,000
1873	218,394,550	1884	261,266,750
1874	208,489,500	1885	222,953,000
1875	124,030,240	1886	227,463,000
1876	204,346,725	1887	196,983,000
1877	167,806,750	1888	267,224,000

THE LATH OUTPUT.

The Saginaw River Mills made a fairly creditable showing in the production of lath during the season, although lath mills were taken out of two or three mills that had heretofore engaged in the manufacture. There was an active demand for lath during the entire season, prices ranging at $1.30 to $1.65 per M.

The product is manufactured from slabs and other refuse from the saw logs. The production during 1888 was as follows:

The Saginaws.

	PIECES.		PIECES.
Green, Ring & Co	4,400,000	Stevens & LaDue	175,000
Eaton, Potter & Co	1,000,000	C. L. Grant & Co	387,000
Merrill & Ring	3,127,000	J. W. & E. S. Bliss	1,300,000
Sample & Camp	2,235,000	Rust, Eaton & Co	5,072,700
Briggs & Cooper	350,000	Mitchell & McClure	5,382,000
West Side Lumber Co	2,323,395	Whitney & Batchelor	3,617,000
A. W. Wright Lumber Co	4,636,400	Rust Bros. & Co	1,896,400
C. K. Eddy & Son	3,638,800	N. Holland	1,380,000
C. Merrill & Co	2,390,550	Gebhart & Estabrook	1,948,000
E. F. Gould	529,300		
A. T. Bliss & Bro	2,250,000	Total	48,538,545
Sanborn & Hill	500,000		

Bay City, West Bay City and Essexville.

	PIECES.		PIECES.
G. C. Myers	900,000	H. W. Sage & Co	9,150,000
Hitchcock & Blaly	2,400,000	Carpenter & Co	2,262,000
Miller & Lewis	1,700,000	E. Lewis & Co	200,000
L. L. Hotchkiss & Co	400,000	Eddy Bros. & Co	2,680,500
E. J. Hargrave & Son	3,000,000	Dolsen, Chapin & Co	1,800,000
Miller Bros	700,000	McEwan Bros. & Co	1,860,600
Rust Bros. & Co	3,361,000	Green & Stevens	2,200,000
Butman & Rust	2,998,300	N. B. Bradley & Son	2,992,600
Eddy, Avery & Eddy	3,853,000		
Edmund Hall	5,500,000	Total	62,428,400
Wm. Peter	2,320,400		
S. G. M. Gates	7,400,000	Total for River	110,966,945
Pitts & Cranage	4,750,000		

COMPARATIVE.

Following is a comparative statement of the lath manufactured by the Saginaw River Mills since 1866:

	PIECES.		PIECES.
1866	48,623,000	1878	53,236,075
1867	63,870,875	1879	65,969,000
1868	61,478,910	1880	65,663,833
1869	51,754,221	1881	65,983,750
1870	61,287,500	1882	94,703,800
1871	62,850,900	1883	106,132,490
1872	76,951,800	1884	127,346,000
1873	87,330,400	1885	80,931,400
1874	73,675,950	1886	100,119,400
1875	73,209,255	1887	89,873,550
1876	72,703,660	1888	110,966,945
1877	72,514,999		

The season closed with stocks on hand practically exhausted.

LOGS IN MILL BOOMS.

AT the close of the season the respective manufacturers had in their mill booms quantities of logs stated in the subjoined tabulated statement. These logs will be immediately available as soon as the mills start up in the spring, and together with logs brought in during the winter by rail, and logs now in the booms of the several streams, undelivered, furnish stock to keep the mills in operation until the supply put in during the winter of 1888-9 becomes available:

The Saginaws.

	LOGS IN MILL BOOM, FEET.
Green, Ring & Co.	4,400,000
Eaton, Potter & Co.	250,000
Merrill & Ring	200,000
Geo. F. Williams & Bro	200,000
A. W. Wright Lumber Co	5,325,059
Sanborn & Hill	500,000
Stevens & LaDue	1,000,000
C. L. Grant & Co	272,000
Rust, Eaton & Co.	1,600,000
Mitchell & McClure	6,134,000
Whitney & Batchelor	3,000,000
Rust Bros. & Co	300,000
G. B. & S. L. Wiggins	100,000
N. Holland	500,000
Brown & Ryan	3,200,000
Saginaw Lumber & Salt Co	2,000,000
Gebhart & Estabrook	2,051,000
N. & A. Barnard Lumber Co	400,000
E. Andrews	300,000
Wylie Bros	1,500,000
S. W. Tyler & Son	500,000
W. F. Stevens	250,000
Melchers & Nerreter	300,000
Total	34,282,059

	PIECES.
Sample & Camp	7,800
C. S. Bliss & Co.	9,300
A. T. Bliss & Bro	250
J. W. & E. S. Bliss	400
C. & E. TenEyck	300
C. E. Ring	2,000
Total	20,050

Bay City, West Bay City and Essexville.

	LOGS IN MILL BOOM, FEET.
G. C. Myers	100,000
Hitchcock & Bialy	300,000
E. J. Hargrave & Son	500,000
Rust Bros. & Co	200,000
Butman & Rust	750,000
E. Hall	3,000,000
Wm. Peter	265,500
Pitts & Cranage	2,500,000
H. W. Sage & Co	1,000,000
Smith Bros. & Co	100,000
Dolsen, Chapin & Co.	2,000,000
E. Y. Williams & Co	200,000
J. R. Hall	500,000
Lanford & Mitchell	500,000
W. B. Rouse	1,000,000
Carpenter & Co.	1,500,000
N. B. Bradley & Sons	1,000,000
Total	15,415,500

	PIECES.
E. Lewis & Co.	95
Total for river	51,929,395

STAVES AND HEADING.

The manufacture of staves in the Saginaw Valley is an important and growing industry, the product being divided into three classes, pine staves and heading, which are manufactured at the saw mills, the product being utilized in the manufacture of salt barrels; elm staves which are manufactured at numerous inland mills for sugar and flour barrels, the product being shipped by rail to the Eastern market; and the manufacture of oak pipe and West India staves which are shipped to a foreign market, both by rail and water.

A. T. BROWN. **WM. RYAN.**

BROWN & RYAN,

Manufacturers and Dealers in Assorted Pine and Hardwood

LUMBER,

ROUGH OR DRESSED.

CAR SILLS, BRIDGE TIMBER,

—AND—

Especial Sizes of Bill Stuff Cut to Order

ON SHORT NOTICE.

Having White Pine, Norway, Hemlock, Oak, &c., Logs constantly on hand in tree lengths, enables us to fill bills promptly. Our mills will cut 80 feet long.

WE ALSO CARRY A COMPLETE STOCK OF ASSORTED NORWAY AND HEMLOCK.

BILL STUFF.

OUR HARDWOOD LUMBER

Is assorted into grades and seasoned under extensive sheds out of the sun or rain, and comes out bright and nice.

Hard and Soft Maple, White and Black Ash, Red and White Oak, Basswood, Birch, Elm, Sycamore, &c.

Constantly on Hand.

Office, No. 1, over P. O. **EAST SAGINAW, MICH.** **Telephone 390.**

SALT BARREL STAVES AND HEADING.

In many of the saw mills of the Saginaw River, particularly those which operate salt works in connection, stave and heading machines are run, and such portions of the pine slabs as can be utilized are manufactured into heading and staves for salt barrels. In this manner the refuse material is worked up and the production of salt cheapened.

Following is the product of salt barrel staves and heading manufactured by the Saginaw River mills during the season of 1888:

The Saginaws.

	STAVES, PIECES.	HEADING, SET.
Green, Ring & Co	1,800,000	98,700
Merrill & Ring	1,189,000	7,125
Briggs & Cooper	700,000	16,800
Geo. F. Williams & Bro	328,700	14,982
Sample & Camp	535,000	20,000
West Side Lumber Co	435,000	21,598
A. W. Wright Lumber Co	624,925	52,510
C. K. Eddy & Son	1,081,250	46,610
C. Merrill & Co	1,059,531	60,524
A. T. Bliss & Bro	1,000,000	45,000
Sanborn & Hill	600,000	25,000
Stevens & LaDue	360,000	25,000
C. L. Grant & &o	455,000	11,000
J. W. & E. S. Bliss	580,000	35,000
Mitchell & McClure	1,523,000	70,500
Whitney & Batchelor	2,239,000	118,500
Rust Bros & Co	523,000	23,100
G. B. & S. L. Wiggins	340,000	10,000
N. Holland	860,000	31,000
Saginaw Lumber & Salt Co	750,000	40,000
Gebhart & Estabrook	503,000	33,280
S. W. Tyler & Son	....	70,000
J. H. Freeney	....	20,000
Total	17,486,406	896,220

Bay City, West Bay City and Essexville.

	STAVES. PIECES.	HEADING, SET.
L. L. Hotchkiss & Co	900,000	60,000
Carpenter & Co	700,000	25,000
Hine & Laderach	200,000	15,000
J. R. Hall	....	150,000
W. B. Rouse	500,000	30,000
Eddy Bros. & Co	784,000	45,500
Dolsen, Chapin & Co	1,067,000	45,000
McEwan Bros. & Co	1,265,000	40,000
Smith Bros. & Co	825,000	115,000
Wm. Peter	755,380	49,172
Pitts & Cranage	950,000	60,000
H. W. Sage & Co.	1,106,550	....
E. Lewis & Co	592,450	20,000
Miller Bros	....	60,000
Eddy, Avery & Eddy	939,514	47,574
F. E. Bradley & Co	1,785,000	44,000
Miller & Lewis	1,100,000	75,000
G. C. Myers	750,000	20,000
*S. McLean, Son & Co	500,000	....
E. J. Hargrave & Son	....	36,000
N. B. Bradley & Son	900,000	50,000
Total	15,869,894	987,246
Total for river	33,356,300	1,833,466

*Pickets 600,000.

The manufacture of elm staves for sugar and flour barrels is carried extensively in this section of the state, mills being located at Freeland, Reese, Fairgrove, Unionville, Caro, St. Louis, St. Charles, Fergus, Vanderbilt, Alma, Merrill and other points. The total product will approximate 110,000,000 during the year. They are mostly railed to Eastern markets.

LAKE COMMERCE.

The season of 1888 was fairly satisfactory to the vessel interest. The first cargo of lumber moved out of the river April 12, and the last cargo was cleared November 28. There was less tonnage engaged in the trade than during the previous season, and hence vessels experienced little difficulty or delay in obtaining cargoes during the entire season. Freights were also steady and fairly satisfactory there being but little fluctuation. They opened and closed as follows:

OPENED.		CLOSED.	
Bay City to Buffalo	$1 75	Bay City to Buffalo	$2 75
Saginaw to Buffalo	1 87½	Saginaw “ “	2 87½
Bay City to Ohio ports	1 50	Bay City to Ohio ports	2 25
Saginaw “ “ “	1 62½	Saginaw “ “ “	2 37½

The movement of lumber products, however, was the smallest in 12 years, owing chiefly to the increasing rail trade. The lumber moved aggregated 451 391,000 feet, against 486,285,000 for the season of 1887. Considering the lumber cut of the river mills during the season at 880,000,000 feet it will be seen that but little over about one-half of the product has gone out by water. In 1882 the product aggregated in round numbers 1,011,000,000 feet and the lake shipments were 858,000,000 feet. The shipments by rail that year were 48,197,765 feet; this year they aggregate 305,000,000.

The movement by lake during the season of 1888, with port of destination, and comparisons, are shown in the following tabulated statement compiled from the Custom House books at the river ports:

East Saginaw.

Port of destination.	Lumber, feet.
Tonawanda	36.395,000
Cleveland	19,025,000
Buffalo	17,420,000
Toledo	16,690,000
Detroit	2.823,000
Sandusky	1,725,000
Port Clinton	800,000
Erie	750,000
Oswego	540,000
Cheboygan	250,000
Lorain	225,000
Total	96,723,000

	Shingles.
Tonawanda	8,650,000
Buffalo	6,800,000
Cleveland	4,700,000
Detroit	420,000
Total	20,570,000

	Lath, pieces.
Buffalo	2,400,000
Tonawanda	2,120,000
Cleveland	1,330,000
Toledo	100,000
Total	5,950,000

MISCELLANEOUS.

	Staves, pieces.
Cleveland	600,000
Port Hope	500,000
Total	1,100,000

	Hoops, pieces
Cleveland	50,000

COMPARATIVE

	LUMBER.	SHINGLES.	LATH.
1882	276,167,000	95,095,000	11,021,000
1883	228,194,000	53,485,000	19,277,000
1884	197,468,490	60,609,000	14,402,000
1885	198,410,000	37,074,000	10,184,000
1886	173,734,000	42,038,000	14,686,000
1887	138,444,000	23,113,000	8,328,000
1888	96,723,000	20,570,000	5,950,000

Bay City.

Port of destination.	Lumber, feet.
Tonawanda	164,445,000
Buffalo	68,475,000
Cleveland	44,403,000
Toledo	41,817,000
Detroit	12,927,000
Erie	9,670,000
Sandusky	4,499,000
Ogdensburg	4,320,000
Black River	1,705,000
Chicago	1,424,000
Lorain	1,120,000

Port of destination.	Lumber, feet.
Port Clinton	790,000
Wyandotte	471,000
Dunkirk	425,000
Port Huron	330,000
Huron	260,000
Marine City	206,000
Fairport	200,000
Ashtabula	140,000
Fairhaven	41,000
Total	354,688,000

	Shingles.
Tonawanda	29,545,000
Buffalo	12,620,000
Cleveland	12,450,000
Ashtabula	550,000
Fairhaven	157,000
Total	55,322,000

	Lath, pieces.
Toledo	5,332,000
Cleveland	5,014,000
Tonawanda	1,100,000
Buffalo	778,000
Ashtabula	535,000
Detroit	315,000
Erie	220,000
Total	13,294,000

MISCELLANEOUS.

	Heading, pieces.
Cleveland	600,000
	Telegraph poles, number.
Monroe	500
	Staves, pieces.
Cleveland	200,000

	Hoops, pieces
Cleveland	200,000
Tonawanda	100,000
Total	300,000

COMPARATIVE.

	LUMBER.	SHINGLES.	LATH.
1882	582,147,000	112,281,000	20,995,000
1883	551,798,967	115,898,000	28,742,000
1884	539,612,382	93,661,000	35,414,250
1885	461,255,000	97,475,000	20,464,000
1886	417,279,100	75,456,000	18,467,000
1887	347,741,000	59,585,000	17,968,000
1888	354,668,000	55,322,000	13,094,000

AGGREGATE FOR THE SEASON.

For the season the aggregate shipments from Saginaw River ports were:

Lumber, feet	451,391,000
Lath, pieces	19,224,000
Shingles	75,892,000

THROUGH SLEEPING CAR LINE

DAILY

BETWEEN

Chicago and the Saginaw Valley

—VIA—

CHICAGO & GRAND TRUNK

—AND—

FLINT & PERE MARQUETTE

RAILROADS.

8:10 a. m.	Arr.--- Chicago ---Dep.	8:15 p. m.
8:35 p.m.	Dep.---Saginaw ---Arr.	7:30 a. m.
8:00 p. m.	Dep.-- Bay City ---Arr.	8:00 a. m.

F. & P. M. R. R.

TO AND FROM

DETROIT & TOLEDO

—AND—

FLINT, SAGINAW, BAY CITY, MT. PLEASANT, CLARE, FARWELL, REED CITY, LUDINGTON, MANISTEE,

—AND—

MILWAUKEE, WIS.

D. EDWARDS,
Asst. General Manager.

SANFORD KEELER,
Supt.

General Offices, East Saginaw, Mich.

COMPARATIVE.

The following figures show the aggregate shipments of lumber and shingles by water, from the opening of navigation to the close of the years named from the ports of East Saginaw and Bay City:

	LUMBER.	SHINGLES.
1868	430,128,000	74,141,105
1869	474,912,425	86,178,500
1870	487,489,268	130,448,490
1871	516,620,474	142,661,500
1872	492,834,900	87,204,500
1873	452,768,562	38,521,500
1874	448,707,652	82,164,500
1875	445,149,155	117,832,500
1876	455,227,252	105,743,000
1877	539,886,047	162,594,250
1878	525,282,098	87,699,380
1879	678,298,866	222,602,731
1880	769,573,000	168,145,400
1881	833,050,939	149,816,000
1882	858,344,000	176,376,500
1883	778,702,067	164,032,000
1884	734,938,460	154,333,000
1885	659,665,000	129,549,000
1886	591,013,100	117,494,000
1887	486,285,000	85,698,000
1888	451,391,000	75,892,000

OAK STAVES AND TIMBER.

There has been a slight decrease in the manufacture and shipment of oak staves by lake for the reason that in the interior considerable quantities are handled by rail. The shipments during the season of navigation in 1888 were as follows:

Year.	Pieces.	Year.	Pieces.
1860-65 (inclusive)	3,000,000	1877	4,970,859
1866	4,000,000	1878	2,372,427
1867	4,919,010	1879	4,221,731
1868	5,004,958	1880	1,953,000
1869	3,720,000	1881	1,537,073
1870	5,690,000	1882	758,682
1871	6,820,000	1883	882,811
1872	8,663,000	1884	154,277
1873	9,568,898	1885	513,000
1874	4,624,068	1886	1,244,000
1875	3,113,721	1887	1,361,000
1876	6,641,209	1888	1,300,000

In this market staves were quoted: Canada pipe $180 per M; white oak West Indias $50; barrel staves $35. Flatt, Bradley & Co. shipped quantities as follows:

West Indias 106,112; Canada pipe 25,511; barrel 11,944.

The same firm also shipped 150,000 cubic feet of oak timber, worth in this market 25c per cubic foot. The timber shipments from the Saginaw river are as follows, in the years named:

	Cubic feet.		Cubic feet.
1869	765,000	1881—oak and pine	769,500
1870	1,105,000	1882—oak, feet	7,853,052
1871	1,982,000	1882—oak, pieces	448
1872	2,560,000	1883—oak and pine	2,166,645
1873	3,234,920	1883—oak pieces	387
1874	2,839,700	1884	34,500
1875	1,234,000	1885	274,300
1876	1,178,145	1886	52,500
1877	1,344,600	1887	30,000
1878	453,800	1887—pieces	229
1879	759,210	1888	150,000
1880—oak and pine	810,500		

The export trade in timber and staves was fairly good and prices well maintained during the season. A rise in ocean freights in the later months caused values to fluctuate. The outlook for the season of '89 is good, for best quality of wood goods.

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on the Saginaw River.

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Telephone, Residence, 493.

SAGINAW LUMBER INSPECTION.

The accepted rules governing inspection of lumber on the Saginaw River are:

First Clear—Is not less than eight inches in width, and is free from imperfections, the term clear implying freedom from defects.

Second Clear—Not less than eight inches in width, at which it must be so nearly perfect as to fall but a trifle short of first clear. As the width increases a large range of defects may be allowed, so that at twelve inches wide, a piece may have two knots of inch diameter, or two narrow saps on one side; at sixteen inches wide, especially if the piece is more than one inch thick, two knots may be allowed, or one knot and one sap not over one and one-half inches in width. At twenty inches in width the two knots may be larger, or the saps may widen to one and one-half inches.

Third Clear—Is supposed to admit of three defects, but up to ten inches knots should not exceed three-quarters of an inch in diameter, or sap not exceed three-quarters of an inch on one side. With increasing width knots may increase to three in number, not exceeding in size one inch each, or sap equal to one and a half inches in width on two edges of one side; with narrower saps a small knot showing on the face side might be allowed; but as a rule the three upper grades demand one perfect face. As in all other markets, the inspector is supposed to exercise a wide range of judgment in the inspection of the three uppers. A plank two inches thick and thirty inches wide will admit of a more lenient judgment, as regards defects in size and number, than a piece of half that size or of one inch thick.

A piece of soft cork pine, of free grain and generally handsome appearance, must not be judged with equal harshness with a piece of glassy texture, tough grain and unfavorable appearance.

An experienced inspector will in all cases judge of a piece of lumber from the standpoint of the location of its defects, and the general utility of the piece. While not more than three defects should as a rule be included in the three upper grades, no one would deny that a wide plank with even five knots located near one side, or even some of these showing through to the face, but where perhaps four-fifths of the plank is "clear as a hound's tooth," is deserving of classification in this grade. In reality, the inspection of lumber in uppers consists in defining what constitutes third clear, as, in practice, first and second clear is ignored, and the number and character of the defects which may be passed in third clear, determines the character of the three uppers. But in Saginaw and some other markets the term "good" is used in designating the upper grades, and purchases are sometimes made in "good," "selects," "fine common," common and culls; yet, unless these terms are specified, the quality "good" in common use will include not only the three uppers, but as well the next grade below, or selects.

Selects—This term allows of four defects in a piece of lumber. Four knots the size of from a dime to a quarter of a dollar, according to the size of the piece, or two saps on one side which, twelve inches wide, should not exceed three inches in the aggregate, or embrace more than one quarter the sap side, the heart side being the face. With increasing width the proportion of sap may increase, or with narrow saps the face side may have some knots. The general description of this grade, however, is of a class of lumber which has defects of such a character as, while condemning it for the three uppers, yet mark it as suited for many or most uses to which the three uppers may be put; the fact that it is usually combined under the term good, with the three uppers, showing it to be more nearly allied to them than to the lower grades. The dividing grade between the three uppers and common was originally known as fourths, and the designations were good, fourths, common and culls When, however, it became incorporated with the three uppers, and was included in that designation (as it has practically become) the grade selects, which had hitherto classed with the common, was admitted to the code, and consisted of what had hitherto been looked upon as raising the common to a higher standard of excellence. A board twelve inches long with a perfect heart side, and the bright sap covering half or more of the sap side, would be a select.

Fine Common—Also sometimes known as select common, or select box, or where the designation is thoroughly known, box, is a grade of lumber suitable for finishing purposes, yet having too much sap on one side, or too many knots on the other, to admit its entry to the grade of selects. Fine common is usually taken from the lumber cut next to the outside of the log, sometimes known as sap boards, the general character of which is to give one face side, while the other is largely covered with sap, which, if properly piled so as to dry without mould, is adapted to a large proportion of the finer work where one side only is exposed to view. With this point in mind the inspector will allow knots in this grade proportioned to the size of the piece. If the sap is narrow the face may have one or two small knots, but, except in wide lumber, the rule is observed, "one side a face." Pieces below eight inches in width are seldom accepted in this grade, and at that width the defect is in sap, which may embrace not more than one-third the sap side and must not run on to the face side; or a board of that width may have a good sap side, nearly if not wholly clear of knots, and with one or two small knots on the heart side. In larger pieces a board or plank having too many defects for the grade of selects, and yet approaching almost to the requirements of that grade, is included in the fine common. A board sixteen inches wide, one inch thick, with five knots the size of one inch, and no other defect would be classed as fine common. The same piece at one and one-half or two inches thick would probably by most inspectors be classed as selects. Shaky lumber is not admitted in this or the upper grades.

Strips, First Clear—Are six inches wide and one inch thick, and free from all imperfections, and are known as clapboard or siding strips. The term siding strips should not be confounded with "sidings" lumber cut from the side of a log, in distinction from the stock, or lumber cut from the square log.

Strips, Second Clear—Six inches wide, one inch thick, and may have two small, sound knots, or if no knots, then sap equal to one inch in width on one edge of one side.

Strips, Third Clear—Six inches wide, one inch thick, and may have three small, sound knots, and upon one side in addition, sap equal to two inches in width. All strips in these three grades must be free from rot, split or shake.

Norway Strips—Answering to the description of first and second clear, and ten feet or more in length, are included in this grade when sold as Norway.

Strips, Flooring and Fencing—Include all strips not as good as third clear, yet free from rot and split. Flooring strips must be of full thickness and width, except where a narrower width is desired, when they may be of the uniform width of three, four or five inches. All knots in flooring strips must be of a sound character. Fencing strips include all coarse grade strips not good enough for flooring, and above the grade of culls, or strips not up to the standard thickness, and their inspection is less rigid than the other grades.

Common—The term common includes all boards, plank, scantling, strips, joist, timber and lumber not otherwise defined, which does not come up to the standard of select box, but is of a generally sound character, well manufactured, of full thickness, and free from large, loose knots or imperfections which involve or weaken the piece for substantial building purposes. Worm holes and small rot streaks, in extent not materially to damage the piece for the uses in which its size is usually employed, belong to this quality. One straight split, not more than one quarter the length of the board, may be allowed. Auger holes (almost unknown in Saginaw) are to be excluded, by measuring in even feet between the holes. No lumber under ten feet in length is considered as merchantable in this or the better grades.

Shipping Culls—Unsound knots, or knots which affect the strength of the piece, black or mouldy sap, unsound hearts, bad splits, badly sawed lumber in wedges or tarves, (uneven edges), where the piece is not available for coarse use, and all lumber not up to the grade of common, is included in this grade.

Saginaw lumber is always manufactured in twelve, fourteen and sixteen feet lengths (with an exceptional log of other lengths) in all grades, except dimension stuff, where lengths are cut to suit the sizes demanded, but the sidings from such logs are usually cut off to the twelve, fourteen and sixteen foot standard.

The thickness of the Saginaw lumber, as usually cut, are one inch, one and a quarter, one and a half and two inches, but with some three inch in coarse plank for road or paving purposes, or in extra nice stocks for thick uppers or deals. All lumber is manufactured in parallel widths, and many mills employ cut-off tables for reducing all lengths to uniformity.

The coarser grades are almost uniformly cut one inch thick, the better grades almost invariably in the one and one-half and two inch thickness.

LOG SCALING.

The first thing a log scaler determines is the length of the log, then its quality or grade, which must be determined by the defects visible to the eye. These consist of crooks, knots, punks, hollows, etc. Looking at both ends of the log he ascertains whether there is any hollow, or ring rot, and if the butt is free from shake. Having settled these points, he lays his rule on the narrowest diameter of the small end of the log. If it is crooked, he takes his diameter (always inside the bark) from a point which allows the saw to pass through the log fully removing the slab. If the butt is hollow, he adds three inches to the diameter of the hollow, multiplies the size by itself, and deducts from the gross measurement. If it is a shaky log he allows for that in determining the quality. If it has not been properly square butted, he makes a memorandum so that the expense of butting can be charged to the seller, or logger, unless in the bargain he is instructed to deduct enough from the measurement to cover the cost. A log cannot be considered merchantable until it is fully prepared for market. If it is very knotty, he lowers its grade accordingly, if he is grading in quality. If the knots are large, black or rotten, he is to determine the class in which the log belongs by the damage caused by the defects. If the defect is ring rot, he should take no account of the log at all, as it is not worth the expense of handling, in a majority of cases. If a log is less than 24 feet long, it should be measured at the end; over that length it is usually measured in the middle by calipers. In very long timber it is sometimes customary to measure at lengths of 12, 14 or 16 feet; this, however, is a matter of agreement between buyer and seller. Dead timber is always measured inside the decayed or black stained sap. In many hardwood sections the sap is always excluded from the diameter of the log. Bright sap in pine, hemlock, poplar, whitewood, basswood and spruce is always measured. Diameters are always to be taken inside of the bark the smallest way of the smallest end of the log.

SAGINAW BOARD OF TRADE.

The advantages derived by conference and interchange of sentiment among business men engaged in a large industry suggested itself to the lumbermen of the Saginaws some years ago, and the result was the organization in 1876 of the Saginaw Board of Trade, under the provisions of a state law for the incorporation of such bodies. The object of the Board was to "promote just and equitable principles in trade; to correct any abuses which may exist, and generally to advance the interests and commerce of the Saginaw Valley. The room of the Board is located in the Bancroft building, and lumbermen from all parts of the Valley as well as visiting dealers, congregate therein daily. For several years the board has issued annual statements of the lumbering operations, compiled by E. D. Cowles, which have been gratuitously circulated and have proved of great value in disseminating information regarding the staple productions of the Valley. The Board has also taken united action in all matters affecting the lumber and salt industries of the Valley, the result being harmony of action and material benefit to all concerned. The annual dues are moderate and the Board numbers on its roll of membership the representative men of the Valley in the lumber and salt as well as other industrial and other business enterprises.

JAMES MACLAREN, President.
R. A. LOVELAND, Vice-President.
R. H. ROYS, Secretary.
D. L. WHITE, Jr., Treasurer.

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SECOND VICE-PRESIDENT—JOSEPH A. WHITTIER.
TREASURER—PATRICK A. O'DONNELL.
SECRETARY—CHARLES W. GRANT.

Committee on Statistics.

W. C. MCCLURE.
C. W. GRANT.
E. D. COWLES.

Members.

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Avery, Sewell
Avery, Waldo A.
Barnard, Arthur.
Batchelor, Henry A.
Baxter, William J.
Bearinger, Isaac.
Bliss, Aaron T.
Brewer, Addison P.
Brown, Archie.
Brown, Addison T.
Brown, John C.
Burnhan, Joseph T.
Burrows, George A.
Butman, Myron.
Callam, William.
Chamberlain, George S.
Chappell, Eugene.
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Coleman, Harrison.
Combs, John A.
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Eddy, Charles K.
Eddy, Darius.
Eddy, Edwin.
Elsemore, Orville E.
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Hauptman, George N.
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Judd, Erastus T.
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Mason, Lucius P.
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Webster, Samuel H.
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Whittier, Joseph B.
Wickes, Henry D.
Wiggins, George B.
Wildman, Andrew.
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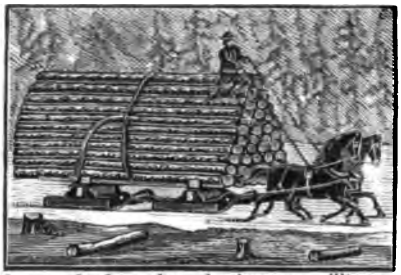
THE LOG PRODUCT.



IT requires a vast quantity of logs to supply the capacious appetite of the Saginaw River mills, and the quantity that comes to this river during a single decade almost puts calculations astray. More pine logs have been floated upon the bosom of the Saginaw river than upon any other stream in the world, and while the supply will gradually diminish henceforth, there will be many million feet rafted a decade hence. The methods of lumbering have been changed. Steam has been utilized and it is no uncommon thing for a single firm to put in during a single season 30,000,000, 50,000,000 and 70,000,000 feet, while over 100,000,000 feet has been reached. Twenty-five years ago 5,000,000 and 10,000,000 feet was a good winter's work.

During the season of 1888, notwithstanding long continued dry weather, the boom companies on the several streams made good records, and there were, comparatively, few logs left back when operations closed.

THE TITTABAWASSEE RIVER.

The Tittabawassee Boom Company was organized and began log rafting in 1864 anp has been in existence a quarter of a century. It has handled more logs than any other log booming and rafting company in the world, aggregating 8,875,238,561 feet. The officers and directors are:

Directors—Wellington R. Burt, William C McClure, James A. Remick, Charles A. Rust, Temple E. Dorr, John Moore, Charles W. Wells.

OFFICERS.

President—T. E. Dorr.
Secretary—C. E. Rust.
Treasurer—John Moore.

During the season of 1888 the company rafted and delivered 4,349,503 pieces scaling 450,766,620 feet, the average scale being 110 feet. Employment was given to 500 men.

The rebate declared for 1888 was 11½ cents on the dollar, a total of $39,493.10

The record of Tittabawassee Boom Company is as follows:

	PIECES.	FEET.
1864	437,236	106,344,789
1865	505,806	148,657,062
1866	756,878	185,381,652
1867	945,416	229,330.215
1868	958,442	228,871,300
1869	1,272,346	276,660,796
1870	1,510,976	346,524,198
1871	1,259,945	288,748,401
1872	1,559,908	309,151,609
1873	1,413,000	268,959,149
1874	1,978,976	338,230,124
1875	1,860,165	309,808,517
1876	1,972,814	342,981,638
1877	2,352,441	422,896,509
1878	2,155,271	328,296,810
1879	3,186,018	455,667,880
1880	3,927,321	580,290,616
1881	3,633,355	499,846,850
1882	4,459,887	611,862,670
1883	3,700,919	474,722'620
1884	4,606,697	584,200,000
1885	2,781,146	326,784,160
1886	3,363,403	403,989,740
1887	3,210,401	356,354,630
1888	4,349,503	450,766,620
Grand total	57,472,280	8,875,248,571

AVERAGE LOG SCALE.

In the office of the Tittabawassee Boom Company a record is kept of the average scale per log of the output each year. The record shows:

	Feet.		Feet.
1864	243 2-10	1877	179 7-10
1865	249 1-2	1878	152 2-10
1866	246 5-10	1879	143 4-10
1867	243 3-10	1880	147 5-10
1868	232 1-10	1881	137 6-10
1869	216 9-10	1882	137
1870	228 9-10	1883	128 3-16
1871	229	1884	124 6-10
1872	199 4-10	1885	115 1-10
1873	190	1886	120 1-11
1874	171 9-10	1887	111
1875	166 1-2	1888	110
1876	173 6-10		

The increase in the value of stumpage and the diminishing supply of timber, as well as modern methods of manufacture have contributed to a closer cut, and at the present time when the cutting of a tract of timber is commenced it is literally skinned.

At the close of operations in 1888 there was 10,000,000 feet in the booms and about 15,000,000 feet back, a total available for the mills early in the spring, of 25,000,000 feet.

CASS RIVER.

This stream has for some years passed out of calculations as a source of supply for Saginaw River mills, yet it continues to furnish a few million feet each season. There was put into this stream during the winter of 1887-8 for the Saginaw River mills, 11,000,000 feet, but owing to the low water only 4,000,000 feet came out, leaving 7,000,000 feet back, which will come out with the coming spring freshet, and be available for next season's supply.

The record of this stream, as far back as data can be obtained, makes the following exhibit:

	Feet.		Feet.
1864-5	40,000,000	1878	6,500,000
1866	71,789,230	1879	11,168,000
1867	74,643,300	1880	5,481,260
1868	83,740,844	1881	12,913,720
1869	71,075,970	1882	5,000,000
1870	60,942,233	1883	13,191,410
1871	55,841,618	1884	2,500,000
1872	90,113,915	1885	3,000,000
1873	100,458,140	1886	5,500,000
1874	40,000,268	1887	3,346,480
1875	56,003,470	1888	4,000,000
1876	18,000,000		
1877	22,029,160	Total	866,539,028

BAD RIVER.

There was rafted out of Bad and Flint Rivers the past season, about 3,500,000 feet, and there is none hung up or in boom limits. The Bad River record is as follows:

	Feet.		Feet.
1872	18,284,621	1882	5,233,625
1873	27,137,284	1883	7,500,000
1874	26,000,000	1884	4,000,000
1875	41,854,804	1885	1,500,000
1876	36,000,000	1886	2,500,000
1877	28,000,000	1887	3,000,000
1878	17,000,000	1888	3,500,000
1879	5,000,000		
1880	9,568,130	Total	296,942,633
1881	6,874,000		

KAWKAWLIN RIVER.

The spring of 1888 opened with 17,000,000 feet of old logs hung up in this stream, and during last season owing to the long continued drouth and low water, rafting by the Bay View Boom Company, that handled the product on this stream, was carried on under discouraging conditions. There was rafted out 9,600,000 feet, and at the close there was back 7,000,000 feet. The product of this stream in the years named was:

	Feet.		Feet.
1872	27,000,000	1881	16,000,000
1873	33,573,354	1882	25,000,000
1874	22,000,000	1883	18,000,000
1875	19,000,000	1884	10,500,000
1876	22,500,000	1885	10,045,883
1877	15,319,000	1886	8,150,000
1878	15,000,000	1887	1,100,000
1879	17,500,000	1888	9,600,000
1880	15,000,000		
Total			285,288,287

FRANK LAWRENCE

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Buying and Selling Wild Lands in all parts of Michigan. Loaning Money, Paying Taxes in any of the Counties of Michigan.

Parties owning Land in any of the Northwestern States are invited to correspond with me, as I buy and sell, have had years of experience, and my facilities are unsurpassed. **For Plats and Particulars, Address**

FRANK LAWRENCE,

No. 116 S. Jefferson St., Abstract Building, - **EAST SAGINAW, MICH.**

RIFLE RIVER.

During the season of 1888 there was rafted and delivered by the Rifle Boom Co. 49,360,825 feet. Of this about 12,000,000 feet were long timber, which were rafted to Detroit and Port Huron, and 37,000,000 feet came to the Saginaw River. The stream was cleared, but there are 5,000,000 feet in the boom at the mouth of the stream. The record of this stream is:

	Feet.		Feet.
1867	23,911,547	1879	82,000,000
1868	48,044,946	1880	79,314,651
1869	55,349,981	1881	92,856,000
1870	80,428,714	1882	115,892,000
1871	55,823,013	1883	109,087,431
1872	61,000,000	1884	82,249,942
1873	80,872,607	1885	58,789,000
1874	58,687,803	1886	91,757,000
1875	92,128,200	1887	60,193,018
1876	61,000,000	1888	49,360,825
1877	70,274,295		
1878	72,112,114	Total	1,581,131,367

The officers and directors of the Rifle Boom Company are:

Directors—H. W. Sage, F. B. Chesbrough, J. F. Eddy, T. E. Dorr, E. T. Carrington.

President—H. W. Sage.

Secretary and Treasurer—E. T. Carrington.

AU GRES RIVER.

The Loggers Boom Company rafted 52,600,000 feet of logs out of Au Gres River this season. At the close there were 3,000,000 feet in the boom and 2,500,000 feet of old logs hung up in the streams. The record of this stream is as follows:

	Feet.		Feet.
1866–8	18,000,000	1879	70,846,786
1869	22,296,661	1880	95,719,614
1870	25,091,635	1881	83,171,000
1871	31,125,084	1882	95,247,334
1872	23,870,742	1883	95,068,276
1873	62,281,246	1884	73,139,197
1874	38,723,688	1885	60,000,000
1875	10,948,620	1886	56,045,183
1876	49,228,472	1887	20,000,000
1877	32,645,493	1888	52,600,000
1878	57,240,750		
Total			1,692,255,716

The directors and officers of the Loggers Boom Company are:

Directors—H. W. Sage, Edwin Eddy, J. H. Plum, Dean Sage, H. S. Ingersoll, F. Johnson, F. D. Pierson.

President—J. H. Plum.

Treasurer—H. W. Sage.

Secretary—F. D. Pierson.

PINE AND SAGININ RIVERS.

There was rafted out of the Saginin River last season 5,000,000 feet and there were none back at the close. About 4,000,000 came out of the Pine. The Pine (Bay Shore) and Saginin, two small streams emptying into Saginaw Bay have furnished quantities, according to records in the possession of the writer, as follows:

	Feet.		Feet.
1879	25,000,000	1885	5,165,000
1880	24,300,000	1886	14,500,000
1881	10,000,000	1887	6,500,000
1882	19,500,000	1888	9,000,000
1883	23,244,295		
1884	14,605,944	Total	153,815,239

RECAPITULATION.

The logs rafted out of the foregoing streams last season, and the quantity of old logs back at the close of operations were as follows:

	Rafted.	Back.
Tittabawassee and tributaries	450,766,620	25,000,000
Bad River	3,500,000	....
Cass River	4,000,000	7,000,000
Kawkawlin River	9,600,000	7,000,000
Rifle River	49,360,825	5,000,000
Au Gres River	52,600,000	5,500,000
Saginin and Pine	9,000,000	....
Total	548,827,445	49,500,000

COMPARATIVE.

Following is a comparative exhibit of the logs rafted on the foregoing streams in the years named:

	Feet.		Feet.
1879	667,181,286	1885	465,284,043
1880	809,674,273	1886	586,440,923
1881	761,606,570	1887	459,494,128
1882	878,725,429	1888	548,827,445
1883	735,368,792		
1884	771,195,083	Total	6,688,697,982

GRAND AGGREGATE.

The total quantity of logs rafted out of these streams in all the years for which records are at hand as given in the foregoing statements, makes the following exhibit:

YEARS.	STREAM.	FEET.
1864–88	Tittabawassee	8,875,238,571
1864–88	Cass	866,539,028
1872–88	Bad	206,942,633
1872–88	Kawkawlin	285,288,287
1867–88	Rifle	1,581,131,367
1866–88	Au Gres	1,692,255,716
1879–88	Pine and Saginin	153,815,239
	Grand Total	13,749,210,841

Upon all of these streams logs had been rafted out in considerable quantities previous to records having been kept of operations thereon. And these streams have, aside from logs hauled by rail, furnished the bulk of the supply for the Saginaw River mills. The Au Sable until recently, furnished a few million each year for the Saginaw River mills, and during the past three years Upper Michigan and Georgian Bay have contributed considerable quantities to the mills on this River.

Railroad Logs.

The business of hauling logs direct from the pineries to the mills has been carried on extensively for several years by the Flint & Pere Marquette Railroad and the Mackinaw Division of the Michigan Central. During 1888 the Flint & Pere Marquette

MICHIGAN SAW CO.

W. H. PRESSER & SONS **PROPRIETORS.**

MANUFACTURERS OF

Circular, Shingle, Heading, Concave, Grooving, Band and Stave Saws.

Saw Repairing, Re-Grinding, Hammering, Etc. *EAST SAGINAW, MICH., U. S. A.*

A. W. WRIGHT LUMBER COMPANY,

A. W. WRIGHT, Pres't.
C. W. WELLS, Vice-Pres't.

F. C. STONE, Treas'r.
W. T. KNOWLTON, Sec'y.

MANUFACTURERS AND DEALERS IN

ROUGH AND DRESSED

LUMBER!

LATH AND SHINGLES.

SAW MILL,
Foot of Throop St.

PLANING MILL,
Cor. Farley and Water Sts.

SAGINAW, MICH.

◆

CARLOAD ORDERS A SPECIALTY.

hauled 161,757,305 feet of logs. A portion of these were banked at Midland and Averill, were rafted thence to the Saginaws by the Tittabawassee Boom Company, and are included in the output of that stream. Of the total quantity hauled 47,163 058 came directly by rail to the river. This road has hauled logs as follows:

	Feet.		Feet.
1882	95,294,630	1886	134,161,236
1883	153,459,353	1887	215,291,134
1884	131,589,429	1888	161,737,305
1885	97,712,270		
Total			989'246,357

During 1888 the Michigan Central Railroad hauled 1,049,303 logs, scaling 141,019,970 feet. A comparison shows:

	Feet.
1886	90,000,000
1887	148,000,000
1888	141,019,970
Total	379,019,970

By Rail and Stream.

The total quantity of logs rafted and delivered on the several streams, and hauled direct to the mills by rail make the following exhibit:

	Feet.
Rafted and delivered	548,827,445
Hauled by rail to Saginaw River	188,183,028
Total	737,010,473

IN MILL BOOMS.

The logs in mill booms at the close of the season's operations in the years named were:

	Feet.		Feet.
1883	54,828,969	1886	33,190,000
1884	74,034,806	1887	22,820,000
1885	48,279,512	1888	51,929,559

McCAUSLAND & CO.

Wholesale Grocers and Dealers in Lumbermen's Supplies.

Among the many substantial and prosperous houses doing business in the Saginaws, none stands higher in commercial circles than that of McCausland & Co. Established some twelve years ago in a very modest way, and now having attained a position of importance equaled by few houses in Michigan, its rise and growth are striking illustrations of the progress made by this city within the past decade. The premises occupied by this firm on South Water street have one hundred and twenty feet frontage, extending back to the river, a distance of ninety feet. There are five large store rooms each of which is devoted to the storage of the different varieties of goods carried in stock. At North Saginaw the firm has an immense warehouse 200x30 feet. The great staples of the grocery trade are kept in such quantities that a purchaser has all the advantages in buying that he might secure by going to the seaboard cities A stock of cigars and tobaccos is carried which in completeness cannot be surpassed in the Saginaw Valley. McCausland & Co's cigars and plug tobaccos are well known in all sections of Northern Michigan, and as jobbers of these goods their trade is constantly increasing. The firm's teas, coffees and spices are of a very superior quality, a fact which is attested by the great popularity they have attained. The spices and coffees are prepared at the mills in the Power block on South Water street, thus insuring their absolute purity. The constantly growing demand for these goods shows how wise a step it was on the part of the firm to establish these mills. In lumbermen's supplies McCausland & Co. do a trade that extends to all the lumbering districts of the State. Great enterprise in pushing sales, and sound judgment in the selection and purchasing of stock have built up this branch of the firm's business to a point which entitles them to a foremost rank among all competitors.

Having been conducted from the very beginning of its career according to the soundest and most honorable business principles, offering customers unequaled inducements, and being managed with great ability and enterprise in every particular, it is not to be wondered that the house of McCausland & Co. receives trade from all parts of the State. Their policy has always been to push sales and now five salesmen are on the road for them. In the Northern Peninsula their efforts have been particularly successful. Such a firm as this is a benefit and credit to the city. The success and prosperity now enjoyed by McCausland & Co. have been honorably achieved, being but proper rewards for unremitting and tireless attention to needs of their customers.

THE CAR TRADE IN LUMBER.

THE last five years have witnessed a revolution in the methods of moving the lumber product of the Saginaw River mills, to market. Previous to 1884 the great bulk of the product was shipped by lake in cargo lots. The trunk railroads, with a tonnage offered them exceeding in magnitude that of the annual wheat crop of Michigan, Minnesota or Dakota, were slow to grasp the situation. Through the efforts of local road officials, backed by the business men in this Valley, rates were finally established by trunk lines that enabled an expansion in the movement, and has resulted in practically revolutionizing the trade. Yards and planing mills sprang up, and in 1885, in round numbers 150,000,000 feet of lumber was moved by rail, being about 15 per cent of the lumber cut, while the records show that in no year for the previous four years had there been shipped more than 5 per cent of the lumber product.

The year 1886 showed a handsome increase in this business, and 1887 eclipsed the previous record, rail rates being fairly satisfactory and uniform. The volume of business has steadily increased, the figures showing a handsome increase in 1888 over the previous year. The following figures, showing the total lumber production on this river in the years named, and the water and rail shipments, in feet, are instructive, as showing the development of the car trade:

	FEET CUT.	WATER SHIPMENTS.	RAIL SHIPMENTS.
1880	873,047,731	769,573,000	27,052,513
1881	976,320,817	832,059,939	46,894,935
1882	1,011,274,905	858,344,000	48,197,765
1883	938,675,078	778,702,067	46,680,473
1884	978,497,853	734,928,460	68,728,000
1885	728,498,221	659,665,000	149,672,900
1886	798,826,224	591,013,100	176,500,000
1887	783,661,265	486,185,000	261,900,000
1888	880,669,440	451,391,000	304,362,500

The business of sorting lumber and selling by the car load has passed beyond the experimental stage and is now a fixed fact and a success. With increased railroad facilities afforded by the extension into the Valley of the Toledo, Ann Arbor & North Michigan Railroad, over the Toledo, Saginaw & Mackinaw from Durand to this city, and another eastern outlet assured for the present season, and the establishment of several new yards, the year will show a movement by rail largely in excess of that of last year.

The Saginaw Valley is one of the most favorably located points in the country for a large rail distributing center. It has an immense product of its own and also a railway system branching out into all the pine districts of Northern Michigan. It is always essential to any great lumber market that there should be a supply always available, in such variety and extent that sorting up can be constantly accomplished. No market can long hold a wide-spread trade in which stocks are liable to be so badly depleted that long periods may elapse in which it is impossible to fill bills ordered. Here lumber can be brought in by rail and lake from the entire white pine region. It is centrally located as respects the whole field of supply. Yard dealers can keep their stocks full without difficulty. They have the home product of the mills, which is ordinarily ample enough for a complete yard stock, with outside supplies to draw upon in emergencies.

The entire mill cut of the Valley is accessible by lighters, which can pick up the lumber on the mill docks and convey it to the yards. This handiness of supply with railway facilities reasonably ample and steadily increasing affords unsurpassed advantages for developing a large trade. In addition to several new yards, a number of manufacturers who had hitherto handled their product by cargo are now distributing it by rail.

The rail facilities for handling lumber will be much larger in 1889 than they were in 1888. The Toledo, Saginaw & Mackinaw Company completed a line of road from East Saginaw to Durand which was leased to the Toledo, Ann Arbor & Northern Michigan Company, affording another through line to Toledo and other Ohio, Indiana and eastern points.

During the ensuing year the Port Huron & Northwestern road will be converted into a standard guage, affording additional facilities for moving lumber products east.

Of the lumber shipped by rail in 1888 from the Valley the Flint & Pere Marquette is credited with 182,362,500 feet, and the Michigan Central with 122,000,000 feet.

There is an immense capital and vast experience centering in the Valley that are still reaching out for lumber. With such resources and such facilities for concentrating supplies we may confidently look forward to a vast expansion in the car trade.

The average quotations for stocks in local yards were as follows:

Uppers.

1 inch	$42	1¼ inch	$42	1½ inch	$42	2 inch	$42
2½ "	50	3 "	50	4 "	50		

Selects.

1 inch	$36	1¼ inch	$37	1½ inch	$37	2 inch	$37
2½ "	42	3 "	42	4 "	42		

Fine Common.

1 inch	$30	1¼ inch	$32	1½ inch	$32	2 inch	$32
2½ "	35	3 "	35	4 "	35		

No. 1 Shop, or Outs.

1 inch	$22	1¼ inch	$26	1½ inch	$26	2 inch	$26

Shop, or Cutting-up.

1 inch	$15	1¼ inch	$18	1½ inch	$18	2 inch	$18

Select Common or Shelving.

1 inch	$..	1¼ inch	$26	1½ inch	$26	2 inch	$26

No. 1 Common or Dressing.

1 inch	$.	1¼ inch	$20	1½ inch	$20	2 inch	$20

No. 2 Common or Sd, Common.

1 inch	$..	1¼ inch	$15	1½ inch	$15	2 inch	$15

Shipping Culls.

1 inch	$11	1¼ inch	$11 50	1½ inch	$11 50
		2 inch	$11 50		

Mill Culls.

1 inch	$7	1¼ inch	$7

Wide Boards—13 inches and up.

Shelving No. 1	$28	No. 2 Shelving	$23
No. 1 Common	17	No. 2 Common	15

Shipping Culls—$12.

Stock Plank—6, 8, 10 or 12 inches wide, 12 to 16 feet long.

	1¼ in.	1½ in.	2 in.
No. 1 Common,	$21	$21	$21
No. 2 Common	16	16	16

Cistern Plank.

1¼ inch	$21	1½ inch	$21	2 inch	$21

Sidewalk Plank.

1¼ inch	$13	1½ inch	$13	2 inch	$18

Miscellaneous.

4-4 Shaky Clear	$15	5-4 and 6-4 Shaky Clear	$15

White Pine Lath.

No. 1, 4 feet	$1 65	No. 2, 4 feet	$1 20

White Pine Shingles.

XXX, 18 inches	$3 25	XX, 18 inches	$2 25

Cull, 18 in—75c.

Stock Boards, 12 to 16 feet long.	8 in.	10 in.	12 in.
Fine Common	$30 00	$31 00	$32 00
Shelving or Select Common	20 00	26 00	27 00
No. 2 Shelving or Dressing	20 00	21 00	22 00
12, 14 or 16 feet long.			
No. 1 Barn	17 00	17 00	17 00
No. 2 Barn	14 00	14 00	14 00
No. 3 Barn or Culls	12 00	12 00	12 00

18 or 20 feet long, add $2 per M.

Ceiling and Flooring.	3, 4, 5, 6, 7.	Ceiling and Flooring.	3, 4, 5, 6, 7.
No. 1, Fine Common	$32 00	No. 4, No. 2 Common	$16 00
No. 2, Select Common	25 00	No. 5, Culls	13 00
No. 3, No. 1 Common	20 00		

German Siding. (1x6).		German Siding. (1x6).	
No. 1	$32 00	No. 2	$25 00
No. 3	20 00	No. 4	16 00

Casings or Base Boards.

Clear	(3, 4, 5, 6, 7, 8 or 9 in., as required.)	$40 00
No. 1		35 00
No. 2		25 00
No. 3—No. 1 Fencing		20 00

Bevel siding.

Clear	$22	No. 1	$20	No. 2	$16	No. 3	$14

Fence rails– Dressed four sides.

	No. 1	No. 2	No. 3	No. 4
2x3 or 2x4, 16 feet	$32	$25	$20	$16

Miscellaneous.		Miscellanoous.	
No. 1 Mldg Boards, rough, 4 to 8	$32 00	1x6 No. 1 Flg, rough	$18 00
No. 3 Mldg Boards, rough, 4 to 8	25 00	1x6 No. 2 Flg, rough	14 00
1x6-C strips, rough	31 00	1x6 No. 3 Flg, rough	12 00
1x6-D strips, rough	23 00		

PINE STUMPAGE.

THERE was comparatively little trading in the Saginaw Valley during 1888 for pine located in the Saginaw district for the reason that the great bulk of standing timber in this section is held in few hands for manufacturing rather than speculative purposes. A few tracts owned by parties in the Valley, located in Presque Isle and other counties, notably one tract of 50,000,000 feet on Au Sable River, changed hands at good round figures. There were a good many small trades made for lots cutting from a few hundred thousand to ten million feet, the price paid for stumpage ranging from $4.50 to $8.

The average prices of lumber and stumpage of white pine in the Saginaw district for the years named make the following interesting exhibit:

DATE.	LUMBER, PER M.	STUMPAGE, PER M.
1866	$11 50 to $12 00	$1 00 to $1 25
1867	12 00 " 12 50	1 25 " 1 50
1868	12 00 " 12 50	1 50 " 1 75
1869	12 50 " 13 00	2 00 " 2 50
1870	12 00 " 12 50	2 00 " 2 50
1871	12 50 " 13 00	2 00 " 2 50
1872	13 00 " 13 50	2 00 " 2 50
1873	11 50 " 12 00	2 00 " 2 50
1874	10 50 " 11 00	2 00 " 2 50
1875	9 50 " 10 00	2 25 " 2 75
1876	9 00 " 9 50	2 25 " 2 75
1877	9 25 " 9 75	2 25 " 2 75
1878	9 50 " 10 00	2 25 " 2 75
1879	10 50 " 11 00	2 50 " 3 35
1880	11 50 " 12 00	2 75 " 3 00
1881	12 50 " 13 00	3 00 " 4 00
1882	14 00 " 14 50	3 50 " 4 50
1883	13 50 " 14 00	4 00 " 5 00
1884	12 50 " 13 00	4 00 " 5 00
1885	12 50 " 13 00	4 50 " 6 50
1886	12 50 " 13 00	4 50 " 7 00
1887	12 00 " 13 00	4 50 " 7 00
1888	12 00 " 13 00	4 50 " 7 00

The foregoing does not cover the extreme ranges of values in all cases, but is a fair average of ruling prices.

During the past two years a large quantity of Saginaw Valley capital has been invested in pine timber in upper Michigan, Wisconsin, Minnesota, the south and the Pacific slope. It is estimated that during 1888 no less than $3,000,000 of capital went out of this Valley for investment in timber properties elsewhere.

LUMBER AND SHINGLE MARKETS.

THE cargo lumber market of 1888 was subject to few fluctuations and was decidedly uneventful. Buyers everywhere called for cheap lumber, and the upper grades had few friends, particularly during the early part of the season. The manufacturing season of 1887 closed with 339,000,000 feet of lumber on the mill docks, of which nearly 100,000,000 feet had been sold. The yards also carried a stock approximating 200,000,000 feet. During the winter something like 100,000,000 feet was moved by rail, and a portion of this came from the stocks on the mill docks. The market of 1887 closed dull and featureless. The spring of 1888 opened with a fair inquiry but by no means active market. Sales were reported under inspection at $8.50@$9 for shipping culls; $17@$19 for common and $36@$38 for uppers. Box lumber ruled from $10@$10.50. In fact this class of stock as well as good common lumber was mostly in demand throughout the season. Norway bill stuff was inactive, owing to the sharp competition on the Lake Huron shore. Ordinary lengths sold at $8.30@$9, and a few sales late in the season were reported at $8.

Norway strips were in fair request, quotations ruling at $11@$12.50, the latter being the extreme limit for choice lots.

Many sales of common white pine were quoted at $10.50@$13.50 at straight measure. Good white pine lumber was sold straight at $17.50@$19; choice $19.50@$21, and fair to medium at $14@$16.50.

The high lake freights as the season advanced influenced the cargo market in some respects. A fair range of quotations for the season would be about as follows:

Common	$17 50@$20 00	Under straight measure, fair to choice	16 00@ 21 00
Three uppers	36 00@ 38 00	" " " common	10 50@ 15 00
Shipping culls	8 50@ 10 00	Hemlock	7 00@ 9 00
Norway bill stuff	8 50@ 9 50	Lath	1 40@ 1 65
Box lumber	10 50@ 11 00		

The market for all grades of common lumber closed firm and some manufacturers asked and obtained a slight advance over the ruling quotations during the season.

The shingle manufacturers worked for glory during 1888. The market opened in the spring firm at $3.40@$3.60 for the best grades and one dollar off for clear butts. In June the demand fell off and the market flattened out and continued so through the year, prices closing at $2@$2 20 and $3@$3.30. The best stocks were worked off without difficulty but clear butts dragged. The expectations of manufacturers when the season opened were by no means realized.

The tariff agitation in Congress particularly as affecting the lumber interest, and the disturbing influences of a presidential campaign affected trade in lumber and shingles. Dealers in the eastern distributing markets bought on the hand to mouth principle and the falling off in building operations in the large eastern cities also lessened the demand for Michigan pine. The outlook for the ensuing year is in every respect vastly improved.

Horsemen, Attention!

PARKER'S SPAVIN CURE

Is unequaled as an application to Horses. Sold on its merits only. It excels all other Liniments, Blistering or Firing. Is more effective and perfectly safe to use.

We guarantee that quicker and better results are produced with **PARKER'S SPAVIN CURE** than with any liniment or compound in the market. Strongest testimonials furnished. Try it and be convinced.

Owosso, Mich., Aug. 24, 1888.

E. W. Baker, Esq., Dear Sir:—I have been using and testing Parker's Spavin Cure, and find it superior to any other preparation of the kind. Effectual in curing sweeny, curbs, spavins, and all enlargements of the joints.

S. D. GRIFFITH, V. S.

E. W. BAKER, Sole Proprietor,
ANTRIM, N. H.

WHOLESALE AGENTS IN THE WEST—Peter Van Schaack & Sons, Chicago, Ill.; Singer & Wheeler, Peoria, Ill.; Jas. E. Davis & Co., Detroit, Mich.; Meyer Bros. & Co., St. Louis, Mo.

E. O. EASTMAN, S. L. EASTMAN, East Saginaw Mich. *FRED. HEMPY, Cleveland, O.*

E. O. & S. L. EASTMAN & CO.,

Manufacturers of and Dealers in

ASSORTED - LUMBER.

Yard, Jackson & Lansing Crossing,

Shipments by Rail or Water. **East Saginaw, Mich.**

LEWIS C. SLADE,

WHOLESALE DEALER IN

ROUGH AND DRESSED

Assorted White Pine Lumber

BY THE CARLOAD.

Office and Yard on Atwater St., between Washington Ave. and Jefferson St.,

EAST SAGINAW, MICH.

Shipments Made to All Railroad Points.

HARDWOOD LUMBER.

THE Saginaws are probably the largest distributing point for hardwood lumber in the State. The mills on this river manufactured last year 17,135,435 feet.

Nearly all of the interior mills now manufacture hardwood in small quantities, and as the demand is increasing yearly, they are paying more attention to the manufacture of hardwood stock than formerly.

The qualities that are chiefly manufactured are oak, black and white ash, maple, elm and basswood.

E. Hallenbeck has handled large quantities of oak lumber in this market, buying the timber and manufacturing, for many years.

R. J. Birney & Co. also handled about 1,000,000 feet of hardwood, manufactured at a small interior mill.

At Chesaning Watson & Belden manufactured last season 800,000 feet.

During the season of 1888 there was manufactured at the mills on the Saginaw River hardwood lumber as follows:

The Saginaws.

	Feet.		Feet.
Sample & Camp	100,000	N. & A, Barnard Lumber Company	465,000
West Side Lumber Company	380,000	Brown & Ryan	4,350,972
C. K. Eddy & Son	100,000	Saginaw Lumber & Salt Company	350,000
C. S. Bliss & Co	2,898,254	Rust Bros. & Co.	45,000
A. T. Bliss & Bro	200,000	George F. Williams & Bro	200,000
Sanborn & Hill	500,00	Briggs & Cooper	1,350,000
Stevens & LaDue.	200,060	Eaton, Potter & Co	200,000
C. L. Grant & Co	1,100,000		
J. W. & E. S. Bliss	200,000	Total	13,130,226
G. B. & S. L. Wiggins	500,000		

Bay City, Etc.

	Feet.		Feet.
Miller & Lewis	110,000	F. E. Bradley & Co	300,000
Butman & Rust	34,373	F. Lewis & Co	50,000
Rust Bros. & Co	30,000		
Smalleys & Co	1,700,000	Total	3,96,2909
John Welch	1,000,000	Total, river	17,135,435
Hine & Laderach	771,836		

W. W. Sutherland & Co., of East Saginaw, shipped in 1888 over 8,000,000 feet of hardwood lumber; have sold 2,000,000 feet for next season's delivery, and carry over 2,000,000 feet. They buy at all points in the state and ship by both rail and water. Considerable quantities of oak lumber are manufactured in this district and shipped to eastern markets. A number of million feet of ash were shipped in 1888 to Racine and other western points by water. The hardwood trade is steadily increasing, and the outlook is excellent. There was comparatively little fluctuation in prices during the year. The wholesale selling quotations in this market was about as follows:

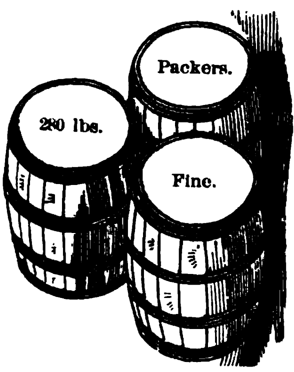
Ash, merchantable, 1 to 4-inch	$13 00@$18 00	Red oak, merchantable	18 00@ 22 00
White ash, merchantable	18 00@ 22 00	Basswood, log run	14 00
Soft maple, 1 and 1¼-inch	13 00	Hard maple, 1st and 2d	18 00
Rock elm.	16 00	Cherry, 1st and 2d	55 00
White oak, merchantable	18 00@ 22 00		

Planing Mills, Factories and Lumber Yards.

THE finer manipulation of lumber and the development of the business of sorting and handling lumber by rail has built up a large industry in planing mills, sash, door, blind and box factories and lumber yards, and the Saginaws have the best equipment in this respect of any lumber center in the west. The planing mills and factories employ from 50 to 450 men each, handling from 5,000,000 to 35,000,000 feet of lumber each annually. The yards are well stocked and sort and pile stock which is shipped in car lots to the trade in the east and south. These industries are of great importance to the business of the cities and the location here of such large and well equipped establishments has given the Saginaws a reputation in this line that attracts customers from all points. Following is a list of these establishments:

Edward Germain, lumber yard, box factory, planing mill and building furnishing.
J. C. Caskey, lumber yard.
H. B. Nease, Son & Co., planing mill and lumber yard.
O'Donnell, Spencer & Co., factory, planing mill and yard.
E. O. & S. L. Eastman & Co., planing mill and lumber yard.
James York & Sons, sash, doors and blinds.
Owen-Hutchinson Lumber Co., planing mill and lumber yard.
Saginaw Lumber & Salt Co., saw mill and lumber yard.
Hoyt estate, planing mill, factory and yard.
Brown & Ryan, saw mill and yard.
Charles Lee, saw mill and yard.
Geo. F. Cross Lumber Co., planing mill and lumber yard.
Benson & King, planing mill and yard.
L. C. Slade, lumber yard.
E. R. Ayres & Co., lumber yard.
Gebhart & Estabrook, saw mill, planing mill, factory and lumber yard.
Linton Manufacturing Co., planing mill, box factory and lumber yard.
East Saginaw & Averill Lumber Co., lumber yard.
Avery & Co., planing mill, factory and lumber yard.
C. K. Eddy Lumber Co., lumber yard.
W. W. Sutherland & Co., hardwood lumber yard.
W. B. Mershon & Co., planing mill, factory and lumber yard.
Mershon, Brown & Co., planing mill, factory and lumber yard.
Judd & Judd, lumber yard.
E. R. Phinney, lumber yard.
A. W. Wright Lumber Company, planing mill, factory and lumber yard.
Kimball & Merriam, lumber yard.
N. & A. Barnard Lumber Company, saw mill and lumber yard.
D. Hardin & Co., planing mill and factory.
Saginaw Manufacturing Company, planing mill and factory.
J. McLean & Co., mill and factory.

MICHIGAN SALT.



THE manufacture of salt has developed into one of the most extensive industries in the State, in most localities being auxiliary to the lumber industry. Michigan has within its boundaries the largest salt producing area in the world, and there are few industries in the United States that compete with the development and magnitude of the Michigan salt interests. Until within a comparatively recent period the salt production was wholly confined to the Saginaw Valley, with a few works at Tawas and in Huron county. The discovery of salt deposits on St. Clair River, at Manistee and Ludington has extended the area, although the Saginaw Valley is the largest producer.

The manufacture of salt in Michigan commenced in East Saginaw in 1860. The general excellence of the Saginaw salt product, and the popularity it has attained in the markets of the country, is due largely to the rigid system of inspection, affording uniformity of grade and quality. A carefully prepared inspection bill was introduced into the Senate of Michigan in 1863, but it failed to pass. In 1865, the late Hon. W. H. Taylor, of Saginaw, Chairman of the Committee on Salines in the House, made a report in which he called the attention to the want of a uniform system of inspection. These successive steps in the right direction resulted finally in the adoption, in 1869, of the present inspection law. The quantity produced previous to the inspection law was:

	Barrels.
1860	4,000
1861	125,000
1862	243,000
1863	466,356
1864	529,073
1865	477,200
1866	407,077
1867	474,721
1868	555,690
Total	3,282,117

State Inspector's Annual Report.

OFFICE OF THE STATE SALT INSPECTOR,
EAST SAGINAW, MICH., DEC. 1889.

To the Hon. C. G. Luce, Governor of the State of Michigan.

The following official report of State Salt Inspector Geo. W. Hill, to the Governor, in compliance with law, for the inspection year November 30, A. D. 1888 is herewith submitted:

SIR:—I have the honor to transmit this, my eighth, the twentieth annual report of the operations of the State salt inspection law, for the inspection year ending November 30th, 1888.

JAMES McGREGOR, JR. JNO. L. JACKSON.

McGREGOR & JACKSON,

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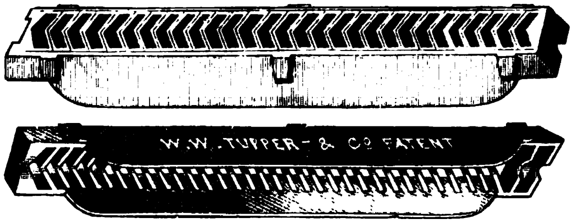
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GEBHART & ESTABROOK,

RAIL OR WATER SHIPMENTS.

LUMBER,

SAW MILL, PLANING MILLS.

TELEPHONE 322-3 R. EAST SAGINAW, MICH.

The law requires that the report shall contain:

First.

The number of districts into which the salt producing territory of the State may then be divided, with the name and locality of each, and the number and capacity of the works of each district.

Second.

The quantity and quality of salt inspected in each district during the preceding year.

Third.

The amount of money received and expenses incurred under this act.

THE SALT DISTRICTS.

The salt producing territory of the State is divided into nine districts, having a manufacturing capacity as follows:

District No. 1—Saginaw County

Has fifty-two salt companies, with forty-five steam, twelve pan blocks and four thousand solar salt covers, having a manufacturing capacity of one million four hundred thousand barrels of salt.

District No. 2—Bay County

Has twenty-nine salt companies, with thirty-two steam blocks and five hundred solar salt covers, with a manufacturing capacity of one million three hundred thousand barrels of salt.

District No. 3—Huron County

Has nine salt companies, with four steam, five pan blocks, and with a manufacturing capacity of two hundred and fifty thousand barrels of salt.

District No. 4—St. Clair County

Has twelve salt companies, with ten steam and two pan blocks, with a manufacturing capacity of six hundred thousand barrels of salt.

District No. 5—Iosco County

Has nine salt companies, with nine steam blocks, having a manufacturing capacity of three hundred thousand barrels of salt.

District No. 6—Midland County

Has three salt companies, with two steam and one pan block, having a manufacturing capacity of one hundred thousand barrels of salt.

District No. 7—Manistee County

Has nine salt companies, with ten steam and one vacuum pan block, having a manufacturing capacity of nine hundred thousand barrels of salt.

District No. 8—Mason County

Has three salt companies, with two steam blocks, one vacuum pan, having a manufacturing capacity of three hundred thousand barrels of salt.

District No. 9—Gratiot County

Has one salt company, with one steam block, having a manufacturing capacity of fifteen thousand barrels of salt—did not run season 1888.

RECAPITULATION.

From the above we find there were one hundred and thirty-seven firms engaged in the manufacture of salt during the inspection year 1888, operating one hundred and fourteen steam and seventeen pan blocks. Total number of blocks, one hundred and thirty and four thousand five hundred solar salt covers, with an estimated manufacturing capacity of five million one hundred and sixty-five thousand barrels of salt

DISTRICT NO. 1—SAGINAW COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Nason, Allen & Co.	12,816						12,816
Green, Ring & Co.	120	46,130					46,250
Cameron & Merrill		4,700					4,700
Merrill & Ring		30,658					30,650
Saginaw Manufacturing Company	3,039			235			3,278
The N. & A. Barnard Company	36,533	8,786					45,319
D. Hardin		7,585				295	7,880
D. Hardin & Co.		7,066					7,066
Williams Bros.		15,111					15,111
Brand & Hardin	755	12,250					13,005
Wright Lumber Company	8,839	22,568					31,407
Wylie Bros.	6,285	35					6,320
J. H. Pearson & Son	6,566	13,834	160	102			20,662
West Side Lumber Company	1,062	2,677	170				3,909
C. K. Eddy & Son	26,370	495					26,865
J. H. Freeney		8,045					8,045
E. R. Phinney		2,189					2,189
W. A. O'Donnell		6,113					6,113
G. B. & S. L. Wiggins		14,131					14,131
Eaton, Potter & Co.	14,567						14,567
Rust Bros. & Co.		30,449					30,449
Gebhart & Estabrook		26,555					26,555
Chapin, Ring & Co.		4,008		26			4,157
Briggs & Cooper		3,625					3,625
Sample & Camp		15,433					15,433
Nelson Holland		39,980					39,980
Warner & Eastman		27,066				459	27,525
C. & E. Ten Eyck	887	5,280					6,167
J. J. Winsor	2,751						2,751
W. L. Webber (Trustee)	6,163	5,736					11,889
Brown & Ryan	8,356	10,547					18,903
Tyler & Son		20,760				350	21,110
Melchers & Nerreter	5,212	11,381					16,593
Saginaw Lumber & Salt Company		29,453					29,453
C. Merrill & Co.		56,016					56,016
G. E. Anthony		3,091					3,091
William H. Wright		9,243					9,243
Whittier & Co.	6,435	7,931					14,366
G. & J. Backus		1,305					1,305
Bliss Lumber Company		4,349					4,349
W. B. Mershon	14,019						14,019
E. F. Gould		23,578	603				24,181
A. T. Bliss & Bro.		32,977	18			565	33,560
Stevens & LaDue		27,086				2,000	27,286
Sanborn & Hill		43,785			4,213	397	48,395
C. L. Grant & Co.		11,395					11,395
J. W. & E. S. Bliss		27,395				767	28,662
Rust, Eaton & Co.	29,053						29,053
Mitchell & McClure	16,650	33,404			21,361		71,415
Whitney & Batchelor		67,553	321				67,874
W. F. Stevens		18,857					18,857
Linton Manufacturing Company	9,371	2,931					12,802
Total	215,849	804,051	1,272	460	25,574	3,059	1,050,265

DISTRICT NO. 2—BAY COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Keystone Lumber Company	....	4,578	....	....	....	268	4,846
Dolsen, Chapin & Co	601	33,339	....	....	....	....	33,940
Pitts & Cranage	10,514	29,475	....	....	....	1,186	41,175
N. B. Bradley & Sons	21,302	13,092	....	155	....	214	34,763
McLean, Son & Co	....	43,330	....	....	....	....	45,330
William Peter	....	24,490	....	....	....	....	24,490
Eddy, Avery & Eddy	12,025	47,408	....	....	....	....	59,433
F. E. Bradley & Co	6,643	20,325	....	....	....	4,387	31,355
L. L. Hotchkiss & Co	14,145	20,830	....	....	....	142	35,117
Hine & Laderach	2,297	14,993	....	....	....	29	17,319
Carpenter & Co	18,133	19,010	....	42	....	....	37,185
H. W. Sage & Co	43,723	29,244	....	....	....	....	72,967
C. B. Curtis (Agent)	271	9,280	....	....	....	....	9,551
C. E. Lewis	....	1,514	92	....	....	1,777	3,383
Smith Bros	....	24,346	....	....	....	....	24,346
J. R. Hall	21,278	3,220	....	606	....	....	25,194
E. Hall	14,555	....	....	....	....	....	14,555
Butman & Rust	21,423	....	....	....	....	....	21,423
McEwan Bros. & Co	5,223	29,144	....	....	....	7,037	41,404
Miller & Lewis	1,214	23,987	....	....	....	3,209	28,410
Rust Bros. & Co	29,608	....	....	....	....	....	29,608
G. C. Myers	....	9,715	87	....	....	317	10,119
Rouse Bros	....	17,990	....	....	....	214	18,204
E. Y. Williams & Co	....	23,065	....	....	....	....	23,065
Michigan Pipe Company	6,058	10,703	....	....	....	2,393	19,154
Eddy Bros. & Co	12,184	26,908	....	....	....	....	39,092
Hargrave & Son	86	16,937	....	....	....	13,156	30,179
Folsom & Arnold	4,989	26,308	330	....	....	....	31,627
Atlantic Salt Company	....	....	....	....	600	....	600
Total	246,272	523,231	509	893	600	34,329	805,834

DISTRICT NO. 3—HURON COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Huron Dairy Salt Company	19,650	7,529	....	....	....	....	27,179
Port Hope Salt Company	....	45,102	....	....	....	40	45,142
R. C. Ogilvie	....	8,060	....	....	....	3,000	11,060
Curran, Flach & Conley	....	12,436	....	52	....	....	12,488
Port Austin Manufacturing Company	....	3,522	....	....	....	921	4,433
Ayres & Co	....	26,036	....	431	....	....	26,467
Cleveland Stone Company	....	3,061	....	....	....	....	....
R. Winsor & Son	....	31,760	....	....	....	....	31,750
Winsor & Co	....	1,619	....	....	....	....	1,619
Total	19,650	130,115	....	483	....	3,961	163,209

DISTRICT NO. 4—ST. CLAIR COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
R. B. Baird	....	9,657	....	897	....	185	10,739
Thompson Bros	106	53,709	....	730	....	....	54,546
Marine City Stave Company	13,461	57,067	....	3,961	....	....	74,479
Wonsey & Son	....	1,575	....	....	....	....	1,576
Marine City Salt Works	....	14,699	93	434	....	....	15,226
Walton Salt Association	....	70,715	....	....	....	....	70,715
Marine City Salt & Brick Works	94	22,781	....	40	....	....	22,915
St. Clair River Salt Works	....	14,107	....	393	....	101	14,601
Toledo Salt Company	396	16,855	....	939	....	....	18,190
Germania Salt Company	1,587	7,794	....	150	....	14	9,545
Diamond Crystal Company	29,619	....	....	....	....	....	29,619
Algonac Salt Company	....	3,194	....	....	....	273	3,467
Total	46,263	272,153	93	7,534	....	573	325,616

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JOSEPH HICKSON, General Manager.
L. J. SEARCEANT, Traffic Manager.
WM. EDCAR, Gen'l Pass. Agent.
GRAND TRUNK RAILWAY.

DISTRICT NO. 5—IOSCO COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Pack, Woods & Co		84,344					84,344
East Tawas Salt & Lumber Co		27,598					27,598
Emery Bros		48,281					48,281
Iosco Brine Supply Co		20,929					20,929
Gratwick, Smith & Fryer		71,455					71,455
Potts Lumber Co.		54,501					54,501
Oscoda Salt & Lumber Co		4,370					4,370
H. M. Loud & Son		9,776					9,776
Winona Salt Co.		25,115					25,115
Total		346,360					346,369

DISTRICT NO. 6—MIDLAND COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Wm. Patrick	400	19,732				140	20,272
John Larkin		19,909				1,686	21,685
Sam. Foster	100	240				1,540	1,880
Total	500	39,971				3,366	43,837

DISTRICT NO. 7—MANISTEE COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Manistee Salt & Lumber Co	3,555	100,258		389		2,721	106,923
R. G. Peters Salt & Lumber Co	3,424	160,989	800			14,644	179,857
Canfield Salt & Lumber Co. (Channel Mill)		52,402	1,658			337	54,397
Louis Sands		94,490	5,008			2,701	102,199
Reitz Bros	4,977	58,024	2,202	252		1,115	66,660
Stronach Lumber Co		78,275				1,287	79,562
Canfield & Wheeler	38,893	29,223		4,792		537	73,450
Canfield Salt & Lumber Co. (East Lake)		41,103		3,323		109	44,535
State Lumber Co	5,900	132,254				4,646	142,800
Total	56,749	747,023	9,758	8,756		28,097	850,383

DISTRICT NO. 8—MASON COUNTY.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
Pere Marquette Lumber Co		75,901				241	76,204
Thos. R. Lyon—Agt		72,971	2,283			238	75,430
Butters & Peters.	6,407	108,844				13,830	129,081
Total	6,407	257,716	2,283			14,309	280,715

RECAPITULATION.

FOR WHOM INSPECTED.	Fine Salt, Bulk.	Fine, Bbls.	Common Coarse, Bbls.	Packers, Bbls.	Solar, Bbls.	2d Quality, Bbls.	Total Bbls.
District No. 1—Saginaw Co	215,849	804,051	1,272	460	25,574	3,059	1,050,265
District No. 2—Bay Co	246,272	523,231	509	863	600	34,329	805,834
District No. 3—Huron Co	19,650	139,115	....	483	....	3,961	163,209
District No. 4—St. Clair Co	45,263	272,153	93	7,534	....	573	325,616
District No. 5—Iosco Co	....	346,369	....	....	....	.... .	346,369
District No. 6—Midland Co	500	39,971	.. ....	....	....	3,366	43,837
District No. 7—Manistee Co	56,749	747,023	9,758	8,756	....	28,097	850,383
District No. 8—Mason Co	6,407	257,716	2,283	....	....	14,309	280,715
Total	590,690	3,129,629	13,915	18,126	26,174	87,694	3,866,228

There was from the above table 78,081 barrels less salt inspected than in 1887, but this does not show the amount actually manufactured during inspection year 1888.

Add to the amount inspected	3,866,223
Salt now in bins	902,367
Total	4,768,595
Deduct salt inspected in Dec. Jan. and Feb., 1888	525,331
Amount actually manufactured inspection year 1888, showing decrease of 16,748 barrels	4,243,264

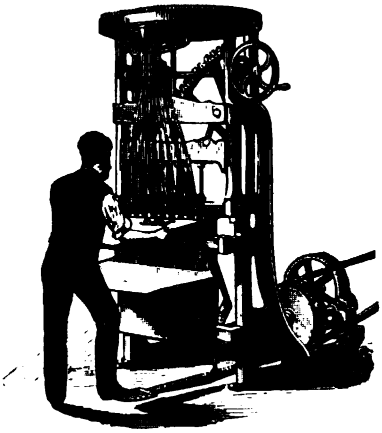
Table Showing Increased and Decreased Inspection Per District.

COUNTIES.	Barrels, 1887.	Barrels, 1888.	Increase.	Decrease.	Total Bbls.
Saginaw County	1,115,169	1,050,265	....	64,904	....
Bay County	891,462	805,834	....	85,628	....
Huron County	176,582	163,209	....	13,373	....
St. Clair County	328,699	325,616	....	3,083	....
Iosco County	309,008	346,369	37,361	....	....
Midland County	41,256	43,837	2,581	....	....
Manistee County	871,575	850,383	... .	21,192	....
Mason County	208,489	280,715	72,226	....	... .
Gratiot County	2,089	....	....	2,069	....
Total	3,944,309	3,866,228	112,168	190,249	....
Decrease	....	....	....	....	78,081

The following table shows the amount of various grades of salt inspected in Michigan since 1869, the first year of the establishment of the State inspection law.

Comparative Table.

YEAR.	Fine.	Packers.	Solar.	2d Quality.	Common Coarse.	Total.
1869	513,908	123,908	15,264	19,177	....	516,288
1870	568,326	17,869	15,507	19,650	.... .	621,352
1871	655,923	14,677	37,645	19,030	... .	728,175
1872	672,034	11,110	31,461	19,876	....	724,481
1873	746,702	23,671	32,267	20,706	....	823,346
1874	960,757	20,090	29,391	16,741	.. . .	1,026,979
1875	1,027,866	10,233	24,336	19,410	....	1,081,856
1876	1,402,410	14,233	24,233	21,668	....	1,462,729
1877	1,590,841	20,830	22,818	26,818	....	1,660,907
1878	1,770,361	19,267	33,541	32,615	....	1,855,884
1879	1,907,350	15,641	18,020	20,027	....	2,058,040
1880	2,589,037	16,691	22,237	48,623	....	2,676,588
1881	2,673,910	13,885	9,683	52,821	....	2,750,299
1882	2,928,542	17,208	31,335	60,222	....	3,037,317
1883	2,828,987	15,424	16,735	33,525	....	2,894,672
1884	3,087,034	19,308	16,957	38,508	....	3,161,806
1885	3,230,626	15,480	19,849	31,428	....	3,297,403
1886	3,548,731	22,221	31,177	71,235	3,893	3,677,257
1887	3,198,070	19,385	13,903	73,905	173,378	3,944,309
1888	3,720,319	18,126	26,174	87,694	13,915	3,866,228
Total						41,907,006
Salt manufactured prior to 1869						3,282,117
Total amount of salt produced in Michigan to date						45,189,123



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RUPP & KERR,

PINE LANDS, LOGS AND LUMBER,

EAST SAGINAW, - MICHIGAN.

Receipts and Expenditures.

The revenue collected by the State Salt Inspector for fiscal year ending November 30th, 1888, is as follows:

RECEIPTS.		
Duties on 3,866,228 barrels at 3 mills per barrel		$11,598.68
EXPENDITURES.		
Salary of State Salt Inspector	$1,500.00	
Printing and office expenses	300.00	
Salary of Deputy Inspectors	9,398.95	
		$11,198.95
Balance		$399.73

The entire surplus held by me and now on deposit in the Home National Bank of this city will be pro-rated back to the manufacturers on or before the 15th day of January, 1889.

New Blocks.

R. G. Peters at Manistee has completed his large vacuum pan block and is manufacturing about 1,800 barrels per day. Messrs. Filer & Sons have in course of construction a vacuum pan at the same place, will be ready for operation next spring.

For various causes the following blocks were not run last season and many of them will not be operated in the future:

Saginaw County—Redmond & Nolan, pan; J. H. Freeney, pan; Frank Beschie, pan; Burnham & Still, steam; J. J. Winsor, steam; Wm. L. Webber, trustee, solar field; Saginaw Manufacturing Co., steam; W. H. Wright, pan; E. C. Chapman, steam.

Bay County—Atlantic Salt Co., solar field; C. B. Curtis, agent, steam.

Huron County—F. Crawford, steam; B. Haskell, pan; Eakins, Soule & Co., steam; Pt. Austin Manufacturing Co., steam; New River Salt Co., pan; Cleveland Stone Co., pan.

St. Clair County—Toledo Salt Co., steam; Excelsior Salt Co., steam; Algonac Salt Co., steam.

Midland County—Samuel Foster, pan; Charles Brown, steam.

Gratiot County—Standard Salt Co.

Other Fields.

I am indebted to George H. Allbright, of Hutchinson, Kansas, for the following information regarding the development of this new field: There are now seven salt blocks running at this place and producing 2,500 barrels of salt per day. There are six more large ones in course of construction, which will increase their capacity to about 6,000 barrels daily. At Tully, thirty miles east of Syracuse, N. Y., Mr. Thomas Percy, of Manistee, Michigan, after many years prospecting for salt rock in the Onondaga Valley found at the depth of 1,210 feet, 47 feet of rock salt. It is the intention to pipe this brine to the Syracuse salt manufacturers.

I am pleased to state that this office has received less complaints from the markets and consumers of Michigan salt the past year than ever before during the existence of the State salt inspection law, and those that have come were upon salt left exposed to the weather for some months. This we cannot control further than to ask the manufacturers to cover salt in barrels outside of sheds with cull lumber. By so doing you will remove the prolific cause for rebates.

Respectfully submitted,
GEORGE W. HILL,
State Salt Inspector.

HOW SALT IS MANUFACTURED.

The manufacture of salt in Michigan had many ups and downs, the latter predominating, in the earlier years. Between 1860 and 1866 not less than $200,000 were invested in the great salt scheme on the Saginaw, and men were bankrupted. The original company invested $300,000 and in 1884 it had shrunk 200 per cent. Another company planted $500,000 and subsequently was sold out for $65,000. It is safe to say that prior to 1870 not a dollar was made in manufacturing salt in Michigan. Why? Well, because of the inexperience of the men engaged in the work and because of the greed to get all the salt there was in the brine. The brine as it comes from the earth on the Saginaw contains iron, which made the salt rusty, bromide of sodium that made it bitter, and gypsum that made it cake, and all of which made it practically useless save as a fertilizer. The wiser man saw that it was a losing game unless they could get rid of these impurities and compel all manufacturers to do so. In 1869 a law was enacted by the Legislature making it compulsory that all salt manufactured in the State should be inspected. To secure this enactment the salt-makers imposed upon themselves a special tax to cover the expenses of the office. That worked well, and the quality of Michigan salt rapidly rose. But there were obstacles in the way of putting it on the market. In 1876 an association was formed, including all the prominent manufacturers, whereby all were bound to observe certain rules and regulations that were thought to be conducive to the success of Michigan salt. The association handled all the salt produced by its members, and thus secured uniform prices. They went to Chicago, and to induce packers to try their salt gave a bond to pay for all the meat spoiled by Michigan salt, or for all shortage in prices due to packing in said salt. The result was that Michigan salt rapidly rose in the estimation of packers, and from a consumption of 36,571 barrels in 1878 to 565,282 barrels in 1887.

Outside of the Saginaw Valley but little is known regarding the process of manufacturing salt, and while it is not possible to enter into extended details, brief reference to the mode of manufacture may be of interest to the reader. The first step is the erection of the drill house, sinking of the well and erection of the building for manufacture, or "block," as it is more familiarly termed. While a few are erected independently, the greater number are erected on saw mill premises and operated in connection with mills, as the refuse fuel supplied from the pine logs, as well as the exhaust steam from the mills in the case of steam blocks, largely cheapens the production of the salt. The stranger steaming up the Saginaw River in summer sees clustered about every mill from three to six or more pyramid towers rising from what appears to be a hut or cabin to a height of from fifty to seventy feet. The little house is the engine-room, in one end of which is the well and the tower is built over it to get room to insert or remove the tools used in drilling the wells or the long "rods" used in pumping the brine. The whole is covered in and generally painted an iron red. On the Saginaw these wells are from 700 to 1,000 feet deep. In one well at Bay City the drills were worked down 2,800 feet in hope of finding "rock salt," but the enterprise was abandoned. At Marine City, on the St. Clair River, rock salt was found at 1,700 feet, and at Manistee, on Lake Michigan, it was found at 2,100 feet.

In making a salt well it is necessary to keep out the surface water. To obtain this result a five or six inch hole is made down to solid rock, on which a "shoulder" is made, upon which rests the iron tubing or "casing." Below that the hole is narrowed to three or four inches, and carries that size down to brine or salt. When rock salt is the material at bottom fresh water is forced down from the surface. It dissolves the salt, loads itself with all it can take up, about 24 per cent, and by the same downward pressure of surface water flows into the "cisterns" through an inside pipe, as clear as distilled water. This is the method on the St. Clair.

On the Saginaw rock salt has never been found. Geologists say the Valley is underlaid with a bowl-like depression of the old Devonian ocean bed and probably the rock salt is there too, if only the drills are sent deep enough to find it. The Saginaw Valley brine is found in what is known to geology as "the Waverly group," being coarse, porous rock that seems to hold the brine as a sponge does water. Where does the brine come from? The rocks of this group crop out on the western shore of Huron and doubtless under the lake, where that vast body of fresh water presses down by precolation through the porous rock, comes in contact with the lower bed of rock salt, dissolves it, and is forced on and up until this "salt rock" is filled with brine, and through breaks here and there is forced so near the surface that in freshets surface water comes in contact with it, and as the surface water falls the brine follows it up on the principle of the syphon and becomes a salt spring.

A good well will yield from 400 to 600 barrels of brine per day. But constant pumping will clog up the pores of the salt rock, produce constipation of the well, so to speak, and the yield fails to such an extent that it becomes necessary to remove the pump and administer a cathartic in the form of a nitro-glycerine torpedo. There are doctors who make a business of this. Carefully the dangerous medicine is lowered through the dark gullet to the bottom of the well. Then "a messenger," an iron weight, is sent down to explode it. A successful explosion always results in an increased yield. The water as it comes to the surface empties into huge cisterns built on trestles high enough to admit of draining them into the "settlers" inside of the "salt block."

These cisterns or outside settlers are generally built in size 20, 30 feet and 6 feet deep, having a capacity of 25,000 gallons or over, as the wants of the manufacturer may require. They are built of sound two to three inch plank, well and properly keyed together by strong gripes, and are also calked to prevent leakage. These cisterns are elevated on piling or framed timbers, high enough to allow the settled brine to flow through pipes to the blocks.

The connections from the cisterns into the pipes are six inches above the bottom, the flow of the brine being controlled by gates. The supply pipes from the cisterns are usually made of wooden pump logs having a three-inch bore.

The brine, as shown by the analysis, contains a small percentage of carbonate of protoxide of iron, held in solution by an excess of carbonic acid.

If the brine was boiled down or evaporated with this iron in, it would give the salt a red color and very materially affect its commercial value.

As soon as the cistern is filled with brine, preparation should be made to settle it. A tight box large enough to hold a barrel or more of water is placed on the top of the cistern. In this a proper quantity of fresh burnt lime is slacked with fresh water, enough being afterward added to fill the box, so as to make a whitewash or milk of the lime. This mixture being a caustic lime, is freely sprinkled over the brine. The brine is then thoroughly "plunged"—that is, it is stirred up until the lime is well mixed with the brine. The caustic mixture of lime having a strong affinity for the carbonic acid extracts the same from the brine, thus releasing the iron which is precipitated with the lime to the bottom of the cistern as an insoluble pretoxide of iron. The brine is then allowed to rest for 48 hours, when it is quite clear and ready for the boiling house or block. This process is called "settling." Then it is drawn into other large cisterns in the block that are called settlers. These are fitted with four-inch galvanized iron pipes, through which a current of steam flows, heating the water to 175 degrees Fahrenheit. This heating does two things. It throws down the gypsum which exists in the brine as a sulphide, and it evaporates the water, 75 per cent of which must be thrown off in vapor before crystallization takes place. But the reader will understand better by a description of a steam block, the evaporation of brine by steam process at the present time being principally used, having superceded the old kettle process. Imagine a wooden building or "block" 208 feet by 90, 40 feet high under the center, which includes the ventilator running the entire length of the grainers, and 16 feet high in the posts. It contains two "settlers," each 140 feet long, 9 feet wide and 4 feet deep. As the cisterns outside are high enough to drain into the settlers, so the latter are high enough to drain into the "grainers," of which there are four, each 150 feet long, 10 feet wide and 18 inches deep. Through these also run galvanized four-inch steam pipes through which the steam is forced. To heat settlers and grainers there are 3,744 feet of such pipe, and other pipes connected with the works make a total of 9,000 feet. The grainers stand about six or eight feet from the ground, and over their center runs a platform upon which the salt as "lifted" is left to drain before being dumped into the "bins," of which there are about twenty. Connected with the bins are the "packing-rooms," and adjoining the block is the "shed," 230x150 feet, with a capacity of 25,000 barrels of salt.

Now let us go into the block again. The settlers are full. It is, say 8 o'clock a. m. The block is so full of steam that you will have to strain your vision to see the floor on which you walk and guard against missteps. The grainers are nearly empty of brine, but their bottoms are covered with the salt that has been quietly falling there for twenty-four hours under a heat of 175 degrees. Along each side of a grainer the gang of eight men is strung out each with his "stent." These men are naked to the waist, over the lower limbs are drawn old woolen drawers, red being a fancy color, and on the feet old shoes or boots with the legs cut away. Each man has a hoe and a shovel. With the one he pulls the salt from the center to the side of the grainer and with the other he "lifts" it upon the aforesaid platform. The salt lifted, the grainers are refilled with brine from the settlers, its temperature raised to 175 degrees, and in a short time

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you will see a film forming over the surface of the saturated brine. That is salt. Watch it a few moments and you will see this film break into pieces and take a "header" down below. So the process goes on for twenty-four hours when the lifting operation is repeated, and so from day to day through the season. By 11 o'clock the men have wheeled the salt to bins and there settles over the graining room a silence as profound as that which must have brooded over the abyss of nothingness ere it was said there should be light. Yet in that silence goes on unceasingly from hour to hour a mystery as wonderful, as beautiful, as divine, as is seen in the evolution or dissipation of a world. The heat unfolds the wings, as it were, of the molecules of water and they rise through the, air, but the sodium is too heavy, too earthly, and cannot soar. Having got the mitten, as it were, it turns to the atoms of chlorine hanging round. They embrace and materialize in tiny crystal cubes, in a few hours to be stored away in bins for packing and shipment to the market and the consumer.

Only seventeen pan blocks were operated in 1888. The pans are made of boiler iron, varying from 90 to 120 feet in length and divided into sections, are from 12 to 15 feet feet wide and 10 to 12 inches deep. The pans rest on walls with arches under thepans which run to the chimney at the end of the block. The salt as it makes in the pan, is drawn out by rakes upon the draining board, and thence wheeled in barrows to the bins.

THE MICHIGAN SALT ASSOCIATION.

THE Michigan Salt Association was organized in 1876, expired by limitation in 1881, was at once reorganized under the name of the Salt Association of Michigan, and in 1885 was again reorganized under its old name, the "Michigan Salt Association." The principal agencies of the Association are at Chicago, St. Louis, Milwaukee, Louisville, Cincinnati, Toledo, Nashville and Sandusky. The capital stock is $200,000, and the general office is at East Saginaw. The Association handles the product of the manufacturers, taking their salt as fast as made,. making liberal advances thereon, placing it on the market and making returns in full when sold. It is an organization of manufacturers and nearly every salt producer is a member. Previous to the formation of this Association manufacturers derived little benefit from their product. The Association is not a trust, in that it never seeks to limit production. This is attested in the fact that at the present time the Association has 1,884,000 barrels of the product of 1888 undisposed of. Formerly individual manufacturers handling their own product shipped it wild upon the market and received unsatisfactory returns. The Association through its agencies provides a market for the salt and through combination manufacturers are enabled to obtain more satisfactory freight rates from the railroads.

The sales of the Association during 1888, as shown by the books of Secretary Holland were 3,300,000 barrels, as against 3,201,537 barrels in 1887 and 2,685,989 barrels in 1886. The total amount of salt on hand at the close of the year's business was

1,884,000 barrels as against 1,870,000 barrels last year, but for the first time in five years were the sales equal to the amount received by the Association. The price received for salt was slightly in advance of the previous year. During December the net price paid to manufacturers was 60 cents per barrel, three cents in excess of the price of salt at a corresponding period in 1887 and the highest paid for six months.

A few months ago salt was discovered at Hutchinson, Kansas, and there are now twelve works in operation there, producing about 1,500 barrels per day Salt has also been discovered in Central Texas, at a depth of 250 feet, within the past two months. The Hutchinson works will come in direct competition with the Michigan product, and though they cannot manufacture salt as cheap as in Michigan, yet they are certain to affect Michigan salt to a certain extent. The New York manufacturers, however, have almost entirely withdrawn their product from all points west of Columbus, preferring to compete with foreign salt, the importation of which is growing less yearly. This partially accounts for the fact that the sales of the Association have not fallen off.

W. R. BURT, PRESIDENT MICHIGAN SALT ASSOCIATION.

The directors for 1889 are: W. R. Burt, J. A. Whittier, W. C. McClure, East Saginaw; Charles A. Rust, F. C. Stone, A P. Bliss, Saginaw; Thomas Cranage, J. L DolAsen, lbert Miller, J. F. Eddy, J. R. Hall, Bay City; Greene Pack, Oscoda; George W.

Jenks, Sand Beach; John S. Thomson, Milwaukee; W. F. Sauber, John Canfield, John Thorsen, R. G. Peters, Manistee; F. J. Dowland, Ludington.

OFFICERS.

President—W. R. Burt.

Vice-President—Albert Miller.

Secretary—D. G. Holland.

Treasurer—Thomas Cranage.

The Executive Committee—W. R. Burt, Thomas Cranage, Albert Miller, W. C. McClure, J. L. Dolsen.

A large quantity of bulk salt is shipped to Chicago and used by the packers of beef and pork there. The sales in 1888 were 471,000 barrels, or 65,951 tons, slight in excess of shipments. A comparison of the bulk shipments makes the following exhibit:

	TONS.	BBLS.
1878	5,120	36,571
1879	9,340	66,714
1880	15,830	113,072
1881	27,018.280	192,986
1882	66,516.1971	475,121
1883	60,356.1109	431,118
1884	50,833.1703	363,813
1885	66,434.1440	474,553
1886	69,458.600	496,129
1887	79,139.48-100	565,282
1888	64,594	461,386

COMPARISON OF PRICES.

The following figures show the average net price received by manufacturers for salt:

Average price per barrel,	1866	$1 80	Average price per barrel,	1878	$ 85
" " "	1867	1 77	" " "	1879	1 02
" " "	1868	1 85	" " "	1880	75
" " "	1869	1 58	" " "	1881	83⅜
" " "	1870	1 32	" " "	1882	70
" " "	1871	1 46	" " "	1883	81
" " "	1872	1 46	" " "	1884	75⅝
" " "	1873	1 37	" " "	1885	70
" " "	1874	1 19	" " "	1886	66
" " "	1875	1 10	" " "	1887	57 4-10
" " "	1876	1 05	" " "	1888	58 5-10
" " "	1877	85			

The charge has been broadly made that the Michigan salt product is unfit for curing meats and for dairy purposes, notwithstanding the fact that more than three-fourths of the beef, pork and butter packed in the United States every year is cured with domestic salt. As to the quality of this domestic salt, it is guaranteed to be equal to any salt in the world, either for salting pork, beef or butter, and the Salt Association have $10,000 to meet this guarantee, and stand ready to deposit that sum with a like sum to be put up by any other organization or individual in the world to enter into a series of tests with competent judges to be agreed upon to determine the superiority or otherwise of the high grade of Michigan salt over all other salts, either as to flavor or "staying qualities." Not only this, but the foregoing figures showing the shipments of bulk salt to Chicago packers substantiates this assertion.

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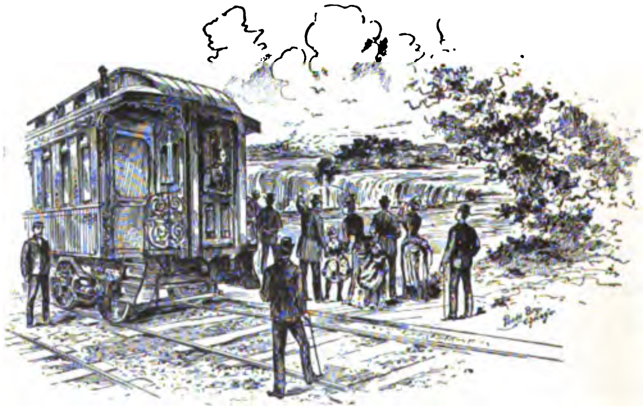

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MICHIGAN DAIRY SALT.

The Michigan Dairy Salt works are located on the west side of the Saginaw River, opposite East Saginaw and were established in 1877. This is the only manufactory in the Valley for the production of a fine grade of dairy and table salt. The capacity of the works is over 85,000 barrels annually and it is sold, like all other salt, through the Michigan Salt Association. The principal distributing points are Milwaukee, Chicago, St. Louis, Memphis, Nashville, Louisville and Toledo, and from these commercial centers it is shipped to all parts of the country. Employment is given to from forty-five to fifty hands, who are engaged in the several departments in purifying, grinding, sacking, and putting the sacks in barrels. This particular product is manufactured from the first and second lifts only of No. 1 fine salt, which is first washed in a purified solution of brine to remove all traces of calcium. This process is a patented one and is used solely at these works. The salt is then dried in a cylinder and screened to get rid of all impurities. It is next ground and packed in sacks, and then into barrels. It is also sold in bulk. The cost of production is greater than that of No. 1 fine salt. The works were only operated a portion of last year, and late in the season were purchased by C. K. Eddy & Son, who are now operating them. The following are the analysis of the four principal manufacturers of dairy salt in the world, and were made by George A. Mariner, analytical chemist of Chicago:

	Michig'n Dairy Salt.	Onondaga F. F. Dairy.	Ashton, Eng., F. F. Dairy.	Higgin, Eng., F. F. Dairy.
Chloride of sodium (salt)	99.4495	99.152	98.547	98.506
Insoluble matter	.0627	.026	.056	.030
Calcium sulphate	.3562	.721	1.227	1.206
Calcium chloride	.1316	.047	....	....
Magnesium chloride	Trace	.034	.059	.031
Magnesium sulphate	....	....	.076	.161
	100.0000	99.980	99.965	99.984

The present range of prices for Michigan dairy salt is as follows:

Per barrel, 280 pounds	$1 30
Per barrel, containing 28 10-pound sacks	1 60
Per barrel, containing 60 5-pound sacks	1 75
Per barrel, containing 100 3-pound sacks	1 90
Per barrel, containing 140 2-pound sacks	2 10
Twenty-eight-pound sacks	20
Fifty-two-pound sacks	30
224 pound sacks	1 00

The Michigan dairy salt is supplanting the Ashton salt in all Western markets. The Dairymen's Associations of Illinois, Ohio, Wisconsin and other States, after a series of the most critical tests, declared Michigan salt to be the best for dairy purposes, and hundreds of testimonials have been received in support of this statement.

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SAGINAW COUNTY.

THE region of the Saginaw presents a comparatively level appearance. The Saginaw Ridge, known to geologists as the western limits of the Lake Erie of ancient days, runs through the county, and forms a continuation of the "lake ridge" running southeast through the southern townships of Washtenaw to the beginning of the formation in Monroe county. When the pioneers entered the Valley the beech and maple flourished along this eminence, with elm, ash, soft maple and pine stretching on either side and along the water courses. But under the axe of the sturdy settler much of the forest has disappeared and the wilderness of 40 years ago has been transformed into the richest grain garden. The lowlands are easily drained and susceptible of high cultivation. The soil is all that the farmer could desire. A deep, dark, sandy loam, with a yellow or blue clay subsoil, is found throughout the Valley. At intervals a small boulder formation may be found, but generally the soil is free from rock. The land in many respects approaches that of the Red River Valley, and is as capable of producing cereals as the alluvial soils of the treeless and storm swept Northwest.

While this county contained vast areas of timber, the proportion of pine has been small. The rich pine trees of commerce have been cut chiefly in adjoining counties and floated down the streams to Saginaw to be manufactured and shipped by water and lake to all parts of the world.

The comparatively low character of the land in this county, coupled with the fact that the lumber and salt industries afforded more opportunities for rapidly acquiring wealth than did the tilling of the soil, early gave rise to the idea which gained wide circulation, that the soil of Saginaw was unfitted for agricultural development. This idea has been exploded by the inexorable logic of events, but for many years it exerted a retarding influence in our agricultural development. From 1860 to the present time drainage has performed wonders for these low lands, and where there were once swamps and marshes and unfertile barrens, there are now green fields and growing crops, as rich in their products as those of any county in Michigan, or in the great northwest. As lands are cleared and opened to the light and heat of the sun, they improve every year, and early frosts are so marked an exception to the general rule that there is no further fear of that dread "bug bear." Wheat, corn, rye, barley, oats, potatoes and all kinds of vegetables here attain their highest perfection. The climate and soil is also well adapted to the growth of apples, pears, plums and other small fruits.

The market for the products of the farm is the best in the world. The county is crossed by railroads in operation and others soon to become realities that afford the agriculturalist a good home market, while the great salt, lumber and other industries in the Saginaws enable the farmer to obtain at all times the highest price for his surplus products. Here mixed husbandry is capable of limitless development, particularly in grass

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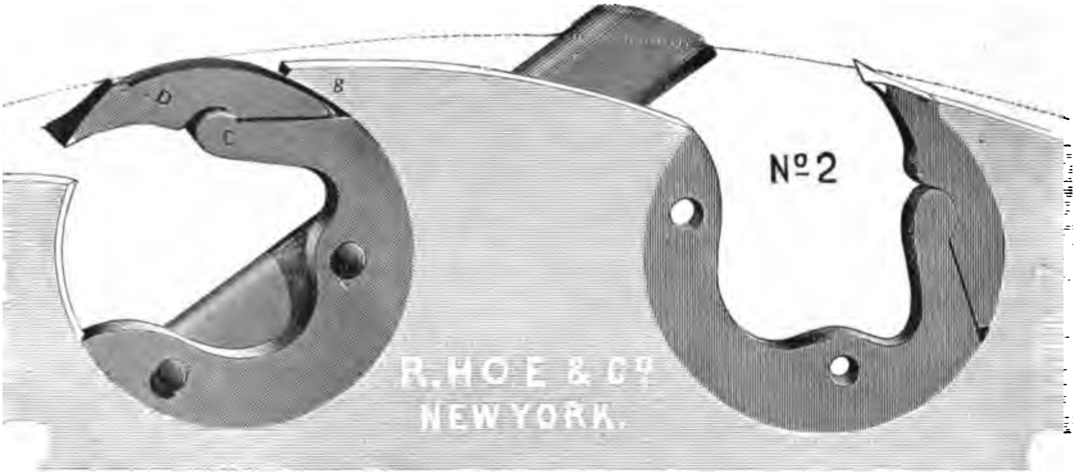

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and stock raising, and considerable attention has been paid during recent years to these. In the county may be found some of the finest herds of blooded cattle and thoroughbred horses in the country.

The census and reports of the Secretary of State furnish ample evidence of the progress made in our agricultural development. For ten years, from 1860 to 1870 the progress was as follows:

	1860.	1870.
Acres of improved lands	18,048	33,385
Value of crops	$165,048	$690,682

The increase in the acreage of improved lands for the ten years as above was 15,337, and the increase in the value of the products was $425,002, and this was but the beginning of the farming development of the county. In the next 14 years the progress is little short of wonderful, considering the obstacles to be overcome in draining and otherwise improving the land. The reports of the Secretary of State made by Supervisors of the respective townships make the following exhibits:

IMPROVED LAND IN FARMS.

	Acres.
1880-1	106,408
1882-3	114,688
1884-5	132,434

CEREAL PRODUCTIONS.	1880.	1884.
Wheat, bu	428,453	403,180
Corn, bu	718,193	766,009
Oats, bu	349,595	650,411
Potatoes, bu	334,688	401,438
Hay, tons	26,931	35,772
Horses	6,943	7,539
Cattle	18,736	20,584

FRUITS, ETC.	1880.	1884.
Apple acres in orchards	3,128.97	3,612.25
Bushels sold	59,538	34,047
Grapes, pounds	81,544	
Other small fruits	1,519	

FARM STATISTICS.

Saginaw County.

THE following farm statistics compiled by the Secretary of State from the reports of the Supervisors in May last will be of interest as showing the extent of agricultural development:

TOWNSHIPS.	Land in Farms.		WHEAT.			Corn Raised in 1887.		Oats raised in 1887.	
	1888, Improved	Unimproved	Raised in 1887.		Acreage.				
	Acres.	Acres.	Acres.	Bushels.	1888.	Acres.	Bushels of Ears.	Acres.	Bushels.
Albee	2,368	3,740	324	4,560	215	243	16,503	381	11,771
Birch Run	10,042	7,029	1,304	20,890	1,242	806	52,584	1,802	61.713
Bloomfield	11,552	5,653	2,504	45,879	2,593	799	60,077	2,473	90,397
Brady	5,457	3,640	1,005	1,396	956	507	32,262	663	21,279
Brant	4,863	4,413	908	14,746	848	391	24,543	571	19,613
Bridgeport	9,837	4,916	1,420	24,400	1,161	604	44,251	1,488	54,253
Buena Vista	9,390	3,320	1,209	21,704	1,088	615	44,652	1,571	50,126
Carrollton	997	203	68	1,217	52	82	7,389	115	3,990
Chapin	2,919	3,993	459	6,683	449	419	25,845	459	17,325
Chesaning	8,635	5,486	1,666	22,836	1,385	991	73,208	1,340	53,517
Frankenmuth	12,840	7,675	3,205	56,830	2,974	775	52.825	3,534	130.840
Fremont	3,391	3,782	685	9,775	768	260	15,978	487	14,971
James	1,882	2,431	172	2,332	208	195	15,936	226	7,587
Jonesfield	2,386	3,607	359	5,376	431	124	9,561	437	13,761
Kochville	5,137	3.781	1,059	16,499	1,040	391	19,679	1,018	33,822
Lakefield	1,043	2,004	162	2,044	176	53	3,679	137	3,350
Maple Grove	5,120	7,380	1,431	25,386	1,260	705	58,642	871	41,786
Marion	397	920	43	564	118	33	1,833	84	2,020
Richland	5,157	4,746	1,112	18,059	1,271	300	20.115	773	25.111
Saginaw	8,959	3,234	1,432	26,289	1,469	689	44,557	1,484	52,758
Spaulding	2,457	1,791	270	4,820	256	154	13,195	287	12,038
St. Charles	3,466	3,266	362	4,655	376	243	15,025	370	10,568
Swan Creek	1,699	1,803	210	3,037	228	108	5,924	171	4,683
Taymouth	4.396	2,702	590	11.375	649	334	25,387	570	19,969
Thomastown	8,195	6,275	1,234	17,140	1.263	586	34.308	1.231	34,861
Tittabawassee	12,135	7,432	2,079	30,208	2,100	928	54,861	2,105	61,427
Zilwaukie	1,383	1,044	95	1,265	78	101	6,625	228	6,885
Total	146,103	106,266	25,457	411,765	24,663	11,436	779,444	24,966	869,439

Clover seed raised in 1877. Acres 4,312; bushels, 8,572. Potatoes, acres, 2,893; bushels 195,443. Hay cut, acres, 34,336; tons 46,334.

Number of horses 8,450; milch cows 11,558; cattle other than milch cows 12,302. Hogs 8,638. Sheep 18,737. In 1887 there were 17,560 sheep sheared, producing 95,483 pounds of wool. There were in the county 2,841 acres in apple orchards and 19 acres in peach orchards.

Bay County.

TOWNSHIPS.	Land in Farms.		Wheat.			Corn Raised in 1887.		Oats Raised in 1887.	
	1888, Improved	Unimproved	Raised in 1887.		Acreage.				
	Acres.	Acres.	Acres.	Bushels.	1888.	Acres.	Bushels of Ears.	Acres.	Bushels.
Bangor	2,320	1,752	195	3,937	92	198	10,279	359	12,969
Beaver	2,055	5,386	231	3,858	271	191	4,279	282	8,231
Frankenlust	7,121	3,541	1,745	28,493	1,709	494	29,055	1,642	52,126
Fraser	1,209	3,505	50	625	22	42	1,830	106	2,647
Garfield	220	940	....	....	2	12	536	35	900
Hampton	6,715	1,525	542	8,906	420	678	46,499	763	28,275
Kawkawlin	3,806	6,205	842	6,250	411	208	16,705	510	15,418
Merritt	4,396	3,386	1,004	15,793	865	408	28,014	647	21,880
Monitor	9,964	7,506	1,594	29,077	1,526	692	46,352	1,780	71,975
Pinconning	2,455	5,450	227	4,038	300	62	1,790	374	10,545
Portsmouth	7,058	3,033	1,082	19,948	1,027	522	37,800	936	35,688
Williams	6,149	7,330	816	11,808	762	379	27,402	1,028	33,317
Total	53,558	49.649	7,828	132,823	7,407	3,796	250,541	8,462	293,980

Clover seed raised in 1887. Acres, 273; bushels, 578. Potatoes. Acres, 2,038; bushels, 155,749. Hay cut. Acres, 15,197; tons, 19,984.

Number of horses in county, 3,096. Milch Cows, 4,540. Cattle other than Milch Cows. 4,583. Hogs, 3,440. Sheep, 2,124. Sheep sheared in 1887, 2,101, producing 12,401 pounds of wool. There were in the county 947 acres of apple orchards.

There are yet thousands of acres of land in the Valley that only await the axe and plow to blossom into fruitfulness, affording the industrious toiler sure and ample reward, with no fear of destructive elemental disturbances, and with the best market, the best educational and religious advantages that a liberal, broad public spirit affords. Land ranges in value at $10 per acre and upward.

POPULATION STATISTICS.

The following returns deal with the Townships of Saginaw county under the old limits, until 1850. From 1860 forward the returns are exclusively for Saginaw county as now organized:

1834—Census Saginaw Township	303
1836—Saginaw then including what is now Bay, Midland, Tuscola, Gratiot and Isabella	900
1840—Saginaw, (Old Boundaries)	892
1860—U. S. Census Saginaw County	12,493
1864—State " " "	19,675
1870—U. S. " " "	39,098
1880— " " " "	59,145
1884—State " ' "	75,813

POPULATION BY TOWNSHIPS.

Organized.	TOWNSHIPS.	1860.	1870.	1880.	1884.
1863	Albee	......	197	434	479
1853	Birch Run	662	925	1,600	1,536
1853	Blumfield	557	1,074	1,369	1,376
1856	Brady	278	471	12,47	1,225
1858	Brant	88	331	460	998
1848	Bridgeport	491	1,171	1,644	1,931
1850	Buena Vista	231	1,005	1,735	2,257
1866	Carrollton	......	1,564	1,737	2,004
1866	Chapin	......	258	646	694
1845	Chesaning	538	1,507	2,050	2,254
1859	East Saginaw	3,001	11,350	19,066	29,100
1854	Frankenmuth	1,082	1,448	1,691	1,734
1857	Fremont	62	170	484	573
1876	James	......	......	572	667
1873	Jonesfield	......	......	317	548
1855	Kochville	658	1,070	1,768	983
1877	Lakefield	......	......	193	267
1867	Maple Grove	201	505	1,383	2,523
1879	Marion	......	......	80	173
1862	Richland	......	466	700	946
1830	Saginaw	879	1,004	1,376	1,391
1857	Saginaw City	1,699	7,460	10,525	13,767
1858	Spaulding	216	2,117	413	419
1853	St. Charles	505	1,185	1,539	1,709
1860	Swan Creek	......	427	369	406
1842	Taymouth	305	638	1,154	1,372
1855	Thomastown	443	697	1,048	1,193
1840	Tittabawassee	513	864	1,506	1,611
1854	Zilwaukee	186	1,153	1,630	1,767
	Total	12,493	39,098	59,145	75,813

East Saginaw, 1888, 37,000.
Saginaw City, 1888, 19,000.

Assessed Valuation.

The assessed valuation of Saginaw county for 1888, by cites and townships, is as follows :

	Real Estate.	Personal Estate.	Aggregate Valuation.
Albee	$ 143,575	$ 7,623	$ 151,198
Birch Run	304,960	26,890	331,850
Blumfield	518,746	81,965	600,711
Brady	263,415	17,290	280,705
Brant	172,759	13,200	185,959
Bridgeport	520,955	65,255	586,210
Buena Vista	621,369	153,465	774,834
Carrollton	300,290	63,691	363,981
Chapin	111,020	5,945	116,965
Chesaning	599,839	80,240	680,079
Frankenmuth	766,475	105,660	872,135
Freemont	141,130	6,420	147,550
James	116,620	13,752	130,372
Jonesfield	115,862	14,064	129,926
Kochville	301,840	23,678	325,518
Lakefield	75,305	1,105	76,410
Maple Grove	399,569	20,787	420,356
Marion	54,038	6,567	60,605
Richland	183,880	25,356	209,236
St. Charles	270,015	25,750	295,765
Saginaw	606,072	66,870	672,942
Swan Creek	107,310	9,490	116,800
Spalding	199,130	6,345	205,475
Thomastown	265,999	26,790	292,789
Tittabawassee	511,968	80,045	592,013
Taymouth	246,080	15,805	261,885
Zilwaukie	391,372	34,175	425,547
City of Saginaw	4,011,790	1,315,380	5,327,170
East Saginaw	8,175,670	2,661,641	10,837,311
Total	$ 20,497,053	$ 3,994,294	$ 25,491,347

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VITAL STATISTICS.

THE first marriage celebrated in the township of Saginaw within the pioneer period, was that of Ariel Campeau and Madeline Mashor, in 1832, and the second that of Thomas Barzer and Sallie Foster, the same year. The record of marriages, since the county was organized, does not extend back of 1835, since that time, however, matrimony has enjoyed a prosperous "run," although at times a dull market was recorded. During the years 1835-7 there were only fourteen marriages recorded, doubtless due in a great measure to the financial stringency of that period.

The number of couples married each year in Saginaw county, is as follows :

Marriages in Saginaw County.

1835	3	1862	102
1836	6	1863	129
1837	5	1864	167
1838	13	1865	182
1839	4	1866	205
1840	12	1867	281
1841	8	1868	396
1842	11	1869	376
1843	6	1870	324
1844	6	1871	373
1845	12	1872	566
1846	11	1873	435
1847	24	1874	442
1848	12	1875	358
1849	35	1876	400
1850	35	1877	332
1851	52	1878	396
1852	83	1879	471
1853	74	1880	499
1854	72	1881	570
1855	99	1882	592
1856	107	1883	830
1857	82	1884	713
1858	69	1885	654
1859	71	1886	628
1860	63	1887	596
1861	85	1888	680

Birth Record.

1867	440	1878	1,407
1868	750	1879	1,320
1869	1,286	1880	1,360
1870	969	1881	1,226
1871	1,026	1882	1,520
1872	1,231	1883	1,628
1873	1,478	1884	1,870
1874	2,164	1885	1,760
1875	1,469	1886	2,065
1876	1,389	1887	1,918
1877	1,402	1888	2,094

Death Record.

1867	216	1878	513
1868	302	1879	710
1869	457	1880	718
1870	388	1881	759
1871	349	1882	957
1872	449	1883	855
1873	666	1884	751
1874	570	1885	888
1875	532	1886	751
1876	504	1887	942
1877	536	1888	888

BANKS AND BANKERS.

EAST SAGINAW.

THE banking interests of East Saginaw form an important part of the great commercial whole. There are four National banks, two Savings banks, and one private financial institution, all of them founded on a solid business basis and enjoying a high degree of prosperity.

The banking season of 1888 was in general a healthy one. The money market was firm, rates ruled high, and a feeling of security and satisfaction prevaded the Cashiers' sanctums. There were no failures of importance in trade circles to shake their position, deposits steadily increased, and the undivided profits accumulated with the regularity of an interest table. Locally all business was prosperous and collections were better than for a long time previous. East Saginaw is particularly fortunate in the personnel of her bankers, and to their keen foresight, sound judgement and liberal conservatism, is due much of the credit for the good name which she has acquired as a banking center. Composed almost exclusively of men who have grown up with the country, they are familiar with the needs, the methods and the resources of the region from an actual experience, whose business values is aptly estimated by the fortunes which they have individually made in the very enterprises which the later banking relations enable them to enchance, and they deal with the daily problems of commerce with a breadth of view and purpose which promises more for the future of Saginaw than even the retrospect of the past. The banking business of the city is universally esteemed to be as safe and sound as in any city in the nation.

The parent bank of the city is the First National, organized in October 1864 by E. T. Judd, its president for a quarter of a century. It was first established and was located ten years in the room now occupied by the Board of Trade. In 1874 the bank was removed to its present quarters, corner of Genesee Avenue and Cass Street. The deposits, which in the early days could have been carried in the president's pockets without physical inconvenience, have now reached almost a fabulous sum, and the resources of the bank are correspondingly generous. The officers and directors are all business men of wealth and standing, and are known throughout the state. The First National has a reputation second to no financial institution in the city, and to the management, ably seconded by the board of directors, does it owe its acknowledged solidity

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EAST SAGINAW, - MICHIGAN.

and continued success. It has never passed a dividend day, or paid less than a 10 per cent. dividend annually and taxes. The last statement of its condition, made January 2, 1889, is as follows:

RESOURCES.		LIABILITIES.		
Notes and Bills Discounted	$376,676 50	Capital Stock paid in		$100,000 00
Overdrafts	4,263 50	Surplus Fund		50,000 00
U. S. Bonds to secure circulation	25,000 00	Undivided Profits		8,409 80
Banking House	20,000 00	Dividends Unpaid		6,000 00
5 per cent. Redemption Fund	1,125 00	Circulation Outstanding		821 26
Due from National Banks	26,422 28	Individual Deposits	$140,689 31	
Cash on hand	34,162 72	Certificates of deposit	100,848 00	
		Due to Banks	27,835 57	
	$487,650 00			269,372 88
		Notes and Bills Rediscounted		30,545 97
				$487,650 00

The First National is officered as follows:

President—Erastus T. Judd.

Vice President--George F. Cross.

Cashier—Clarence L. Judd.

Directors—E. T. Judd, George F. Cross, John W. Howry, W. H. Warner, W. H. Gilbert, John A. Edget, Henry S Wilson.

The Second National bank was organized in 1871 and has continuously occupied the building which bears its name on Genesee avenue. It has from the start ranked among its stockholders many of the ablest and solidest business men of the city, and this guarantee, coupled with wise management, has led it and kept it to the front. The management at all times extends to its customers as liberal accommodations as is consistent with careful banking, and therefere its prosperity has never been on the wane. The list of officers and directors of this bank, given below, embraces names familiar throughout the trade centers of the state, and are in themselves an ample guarantee of the standing and management of the institution. The following is a statement of the bank's condition made towards the close of the year:

RESOURCES.		LIABILITIES.	
U. S. Bonds	$ 37,500 00	Capital Stock	$150,000 00
Banking House	10,000 00	Surplus	30,000 00
Loans and Discounts	700,114 53	Profit and Loss	83,102 80
Expenses and Taxes Paid	2,301 34	Circulation	83,750 00
Overdrafts	3,434 19	Due Banks	9,955 47
Redemption Fund with U. S. Treasurer	1,687 50	Deposits	624,597 19
Due from Banks	86,936 99	Bills Rediscounted	49,540 56
Cash	88,971 47		$930,946 02
	$930 946 02		

President—George W. Morley.

Vice President—Sewell Avery.

Cashier—G. B. Morley.

Assistant Cashier—E. W. Glynn.

Directors—George W. Morley, Sewell Avery, W. A. Avery, E. W. Morley, H. C. Potter Jr.

On the morning of September 12, 1882, the doors of the Home National Bank were thrown open to the business public, and the institution is therefore less than seven years old. The seeds of a healthy and vigorous growth were in the young corporation from the beginning, in the sterling personal and business qualities of its early efficient promoters. The strides it has made in securing business, and the happy confidence which it inspired in the community, show that it was a venture not ill-timed and wisely made. Supplied with ample means and supported by a board of directors who are financially a tower of strength, this bank is manifestly entitled to the confidence of the business comunity, and this, judging from its large and increasing busines, it appears to enjoy. In fine this bank may be regarded by the business public of the city and region as one of the very soundest institutions of the state. The following statement will exhibit more concisely than any verbal paraphase can do the important facts upon which the bank's well-earned reputation is based :

RESOURCES.	
Loans and Discounts	$811,467 85
U. S. 4 per cent. Bonds	50,000 00
Other Bonds	7,500 00
Due from Banks	101,465 40
Banking House	20,000 00
Cash on Hand	49,243 74
Due from U. S. Treasurer	4,250 00
	$1,043,926 99

LIABILITIES.	
Capital Stock	$300,000 00
Surplus Fund	60,000 00
Undivided Profits	3,678 45
Nat. Bank Notes Outstanding	45,000 00
Deposits	623,248 54
Twelfth Dividend (Paid Jan. 5, 1889)	12,000 00
	$1,043,926 99

Its officers are :

President—W. R. Burt.

Vice President—J. A. Whittier.

Cashier—J. H. Booth.

Assistant Cashier—A. H. Comstock.

Directors—W. R. Burt. J. A. Whittier, G. N. Hauptman, P. A. O'Donnell, T. E. Dorr, William Callam, W. C. McClure, Farnham Lyon, J. H. Booth, A. H. Comstock.

The East Saginaw National Bank is the youngest of the local national bank family, and yet its appearance does not indicate the fact. The institution walked alone almost from its birth and is a fine, healthy youngster. The directors were selected from the most successful business men of East Saginaw. They are not men who are just starting in life, and therefore so engrossed in their pursuits as to be incapable of giving any time to the execution of the trust reposed in them. They are men who have made their own fortunes, and are thus well fitted to guard the savings of those who are unable to care for the investment of their own money. This is the personnel of the bank's officers and directorate :

President—S. S. Wilhelm.

Vice President—Edwin Eddy.

Cashier—W. T. Wickware.

Directors—Louis Quinnin, Edwin Eddy, W. B. Baum, John P. Allison, D. B. Freeman.

A statement of the condition of the bank at the close of 1888 showed as follows :

RESOURCES.		
Loans		$356,695 92
U. S. Bonds		25,000 00
Furniture Acct		3,000 00
Premiums Paid		5,500 00
Redemption Fund with U. S. Treasurer		1,125 00
Due from Banks	$ 9,693 51	
Cash on Hand	33,182 26	
		42,881 77
		$434,202 69

LIABILITIES.	
Capital Stock	$100,000 00
Undivided Profits	23,343 73
Circulation	22,500 00
Deposits	213,214 66
Bills Rediscounted	71,124 30
Dividends	4,020 00
	$434,202 69

There is no stronger evidence of municipal health and legitimate prosperity in a new city than the possession of a strong savings bank. Not alone because it indicates thrift and economy on the part of her people, but also because it means a higher order of progressiveness, and a permanent as opposed to a temporarily inflated growth. Why is it, some one naturally asks, that a mutual savings bank is essential to the welfare of a community ? Why are not the commercial banks just as good ? Granted that the commercial banks are equally well adapted for the care of small savings, and that they are as safe. But the mutual bank sets the rate of interest on time deposits for every bank in the city; and keeps that rate at the highest notch which is compatible with sound investments. This saves the poorer classes many thousands of dollars every year, and makes them feel more independent of the monied classes, because they practically do their own banking and control their own investments. It lends tone to a manufacturing city to have a successful savings bank, and stimulates the workingmen to save their surplus earnings.

The Savings Bank of East Saginaw is the older of two sound institutions of this class, having been established in 1872. It enjoys a healthy business, as the following will indicate:

RESOURCES.		LIABILITIES.	
Loans and Discounts	$698,118 74	Capital Paid in	$ 50,000 00
Bonds of the City of East Saginaw and School Districts of this State	6,300 00	Surplus Fund	35,000 00
Cash on hand in office and in Banks subject to check	161,511 45	Interest and Exchange Acc't	21,739 26
		Due Depositors	759,190 93
	$865,930 19		$865,930 19

President—H. C. Potter.

Vice President—Edwin Eddy.

Treasurer—A. Schupp.

Trustees—H. C Potter, Emil Moores, W. L. Webber, H. C. Potter Jr., Edwin Eddy, J. B. Peter, W. J. Bartow, Henry Melchers, G. C. Warner, A. Schupp.

The People's Savings Bank was organized February 1, 1887, and commenced business at its present banking office April 1, 1887. The First Semi-annual Report made on the first Monday of July, 1887, showed:

Deposits of	$ 49,415 01
Discounts and mortgages	63,300 83

Its Second Semi-Annual Report, made January 2, 1888, showed:

Deposits of	$103,074 13
Discounts and mortgages	116,116 61

Its Third Semi-Annual Report, made July 2, 1888, showed:

Deposits of	$140,257 97
Discounts and mortgages	152,094 64

Its report made January 1, 1889, made this gratifying exhibit:

RESOURCES.		LIABILITIES.	
Loans, Discounts and Mortgages	$177,710 71	Capital	$ 50,000 00
Overdrafts	306 91	Undivided Profits	3,625 90
Furniture and Fixtures	4,789 68	Deposits	165,452 17
Cash on hand and on deposit subject to check	36,270 77		
	$219.078 07		$219,078 07

The present efficient staff of officers is as follows:

President—John A. Edget.

Vice-President—J. J. Rupp.

Secretary and Treasurer—J. F. Boynton.

Teller—H. A. Wolpert.

Directors—P. H. Ketcham, W. C. McClure, John A. Edget, J. W. Howry, G. Corning, J. J. Rupp, H. A. Batchelor, Jacob Schwartz, E. N. Wickes, G. B. Wiggins, W. B. Baum, B. F. Webster, C. H. Eames.

The one private bank in East Saginaw is Seligman's Bank of Commerce, of which Jacob Seligman is the head and front and president. W. G. Emerick is the efficient and capable cashier. The bank was organized by Mr. Seligman in 1874 as "Little Jake's Bank," this title being changed in 1880 to the name by which it is at present known. It has a large working capital and the confidence of the public in it is demonstrated by the heavy deposits in its vaults. The condition of the bank at the close of business, February 1, 1889, showed loans and discounts of $471,145.12, individual deposits of $212,556.25 and certificates of deposit $76,709.00. It does a general banking business and furnishes letters of credit, drafts and money orders on all European cities.

SAGINAW CITY.

The banking interests of Saginaw City are in safe, conservative hands, the gentlemen composing the directorate and who act as officers of the several financial institutions being representative citizens ever alert and alive to the up-building and advancement of the city.

The banks include the First National, the Commercial National, the Bank of Saginaw, the Saginaw County Savings Bank and the private bank of George L. Burrows & Co. Each enjoys the confidence of the community to a degree unlimited and all are prosperous.

The First National Bank is the oldest of the banks established under government laws. It began business February 6, 1871 and has a capital of $ 200,000. Its officers are A. W. Wright, President, Charles W. Wells, Vice President, Smith Palmer, Cashier, T. W. Stalker, Assistant Cashier. The statement of its condition February 12, 1889, makes the following excellent showing:

RESOURCES.		LIABILITIES.	
Government Bonds	$500,000 00	Capital Stock	$200,000 00
Loans and Discounts	540,302 36	Surplus	100,000 00
Furniture and Fixtures	3,000 00	Circulation	45,000 00
Premiums on Bonds	2,500 00	Undivided Profits	20,190 51
Due from U. S. Treasurer	3,700 00	Deposits	338,529 47
Due from Banks	83,441 50	Due to Banks	21,433 13
Cash	42,209 25		
	$725,153 11		$725,153 11

The Commercial National Bank commenced business with a capital of $100,000 August 27, 1888, and is rapidly working its way to the front ranks. It is officered as follows:

President—D. Hardin.

Vice-President—L. W. Bliss.

Cashier—M. O. Robinson.

A statement of the condition of business six months after the opening of its doors makes this gratifying exhibit:

RESOURCES.		LIABILITIES.	
Loans and Discounts	$184,389 16	Capital Stock	$100,000 00
Real Estate, Furniture and Fixtures	13,635 77	Surplus and Profits	5,494 48
U. S. Bonds	25,000 00	Circulation	22,500 00
Premiums Paid on U. S. Bonds	6,785 00	Due Depositors	124,178 65
Taxes Paid	273 63		$252,172 13
Expenses	277 33		
Redemption Fund	1,125 00		
Due from Banks	7,871 27		
Cash in Vault	12,725 97		
	$252,172 13		

The Bank of Saginaw commenced business June 2, 1888. It is officered by the following gentlemen:

President—M. Butman.

Vice-President—B. Hanchett.

Cashier—D. W. Briggs.

Assistant Cashier—A. D. F. Gardner.

A statement made January 7, 1889, in accordance with the provisions of the banking laws of the State of Michigan, shows as follows:

RESOURCES.		
Loans and Discounts		$667,795 74
Real Estate and Fixtures		8,000 00
Due from Banks	$51,465 80	
Cash on Hand	38,145 37	89,611 17
		$775,406 91

LIABILITIES.		
Capital paid in		$200,000 00
*Earnings:		
Dividend No. 1	$10,000 00	
Surplus Fund.	2,500 00	
Undivided Profits	8,308 15	20,808 15
Deposits		554,598 76
		$775,406 91

*The stock of the Citizens National Bank was purchased with the expectation that it would pay in liquidation from $162,000 to $165,000.

The amount paid for the stock was	$167,500 00
The stock realized in liquidation	166,608 84
Leaving a deficit of only	$ 891 16
Taxes paid on $50,500 of the same stock	1,373 60
Total amount paid on account of Citizens National Bank purchase	$ 2,264 76

which amount was charged off and deducted from the earnings previous to above statement.

The Saginaw County Savings Bank was organized February 1, 1887, with $50,000 capital and these officers:

President—A. T. Bliss.

Vice-President—L. T. Durand.

Secretary and Treasurer—Richard Khuen.

The last statement from this institution shows as follows:

RESOURCES.	
Loans and Discounts	$233,374 74
Furniture and Fixtures	600 00
Expenses	2,235 25
Due from banks subject to check	46,988 05
Cash in office	3,146 22
	$286,344 26

LIABILITIES.	
Capital stock paid in	$ 50,000 00
Surplus fund	3,000 00
Undivided profits	10,342 96
Due Depositors	223,001 30
	$286,344 26

The private bank of George L. Burrows & Co. is one of the oldest institutions of like character in the Valley it having been established in 1862.

BAY CITY AND WEST BAY CITY.

The first bank in Bay City was established by C. W. Gibson in 1863 and the year following the First National, now the Bay National Bank, was organized and commenced business. It was followed thereafter by the incorporation of the Bay City Bank in 1871, under State law; the Second National Bank in 1874; Lumbermen's State in 1882; Bay County Savings in 1884; the Commercial in 1887 and the People's Savings Bank in 1889. One of the National Banks conducts a savings department, likewise the Bay City, Bay County, Lumbermen's State and People's; the two latter of West Bay City. The Commercial is provided with safety deposit vaults. The following is a tabulated statement showing the present condition of the banks:

THE BANKS.	Capital.	Surplus.	Deposits.	Loans and Discounts.
Second National	$250,000	$100,000	$507,331	$861,850
Bay National	200,000	60,141	415,519	597,372
Commercial	100,000	5,000	134,953	205,782
Bay City	150,000	50,000	551,179	649,424
*Lumbermen's State	40,000	20,000	241,818	355,160
Bay County Savings	50,000	10,000	240,340	242,589
†*People's Savings Bank	25,000	....	....	....
Total	$815,000	$245,141	$2,091,140	$2,912,177

*West Bay City.
†Just opened.

Log and Board Rule Manufacturer.

Since 1886 Mr. J. D'Lambert has been engaged in making log and lumber rules at seven hundred and fourteen Genesee Avenue. The excellence of the articles he turns out is attested by the thousands of lumbermen who use them. Mr. D'Lambert uses none but the best materials, selecting his own hickory from the groves of Southern Michigan and constructing the head of tool steel and brass joined in such a manner that they cannot be broken apart. Lightness, great flexibility and durability are thus secured, qualities which every one who measures lumber knows well how to appreciate. Mr. D'Lambert's rules are handmade, the numbers being burned into the wood, and are the lightest and strongest in the market; they are elegantly finished in every particular and are becoming more widely and favorably known each year, orders now being filled in all parts of the United States and Canada. This gratifying growth of his trade is attributed not only to Mr. D'Lambert's skillful workmanship, but as well to the fact that none but perfect instruments are allowed to leave the establishment. So much has his business increased that he will this year be compelled to greatly enlarge his facilities.

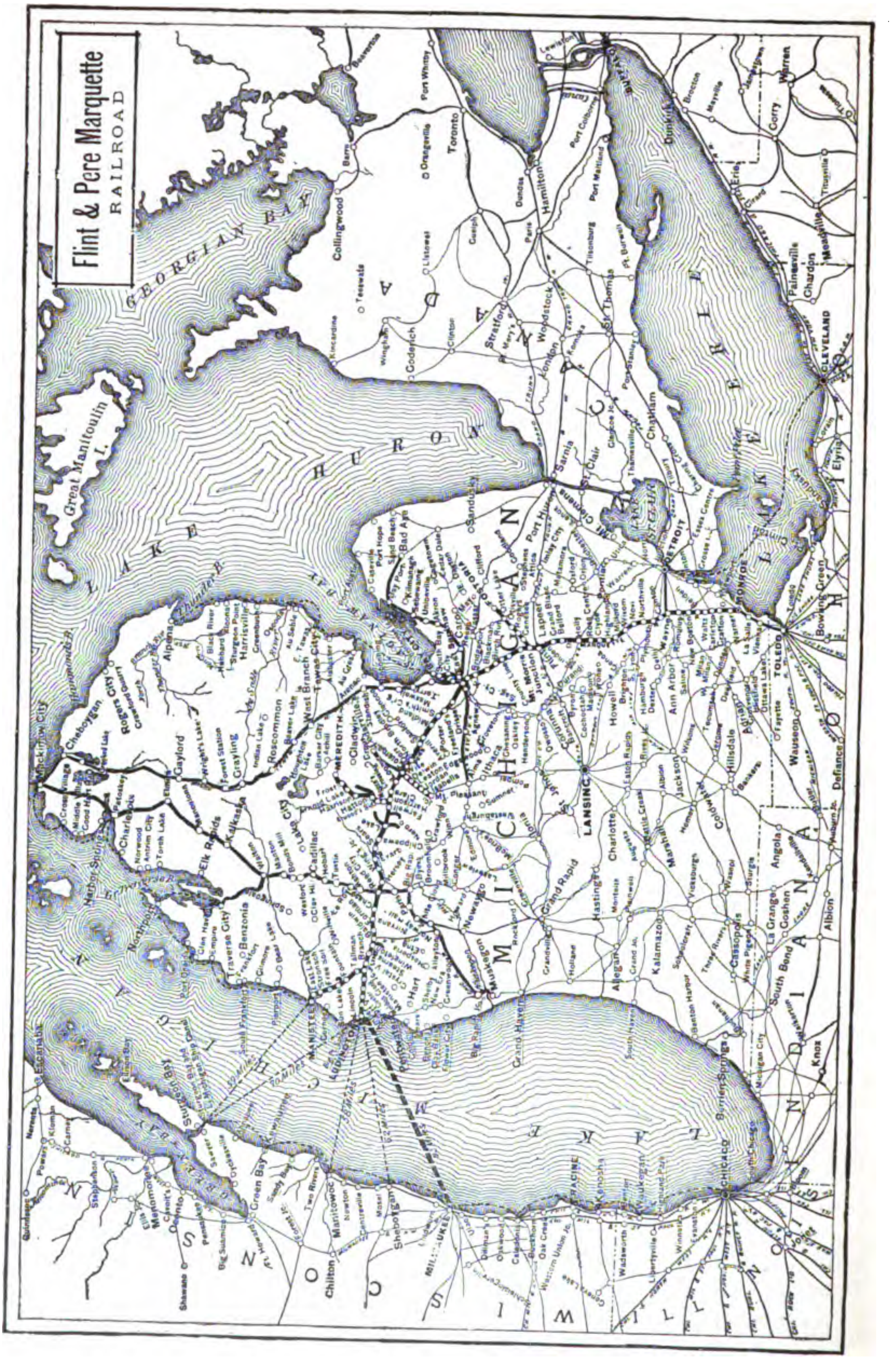
THE RAILROADS.

ONE of the most important factors in the development of the Saginaws and adjacent fertile sections has been the railroads, which interlace the sister cities and stretch away towards the great business centers of the country, East, West and South. The value these great commercial highways has been and still is to the community cannot be estimated.

The systems centering in and passing through the Saginaws are the Flint & Pere Marquette, the Michigan Central, the Detroit, Lansing & Northern, the Port Huron & Northwestern, the Saginaw, Tuscola & Huron and the Toledo, Ann Arbor & North Michigan, which latter operates by lease the Toledo, Saginaw & Mackinaw. Of these the Flint and Pere Marquette is the pioneer and has been of the greatest benefit to the Saginaw Valley. Work upon this road, articles of association having been filed January 21, 1857, was commenced upon the east side of the Saginaw River at East Saginaw and extended southerly towards Flint. On the 20th day of January, 1862 the road was opened to the public from East Saginaw to Mt. Morris, 20 miles, and Mt. Morris continued the southern terminus until December 8, 1862, when it was extended to Flint, having its station on the north side of the Flint River. Stages then took passengers from this station to Fentonville or Holly, where connections were made with the Detroit & Milwaukee railroad. In 1864 the Flint & Holly railroad was built by a separate corporation; and the same year, by an arrangement between the companies, the Flint & Pere Marquette railroad was extended across the Flint River, to a connection with the Flint & Holly road, and thereafter trains ran from East Saginaw to Holly. In 1868 the Flint & Holly road was consolidated with the Flint & Pere Marquette, under the name of the latter.

The railroad bridge across Saginaw River was built in 1867 and the road was opened to Averill, 26 miles westerly from East Saginaw, in 1868. In 1870 it was extended westerly to Lake Station; in 1871 to Reed City, and in 1874 the road was completed to Ludington, on Lake Michigan.

In 1867 the Bay City & East Saginaw railroad, which had been projected by parties at Bay City, was transferred to the Flint & Pere Marquette railroad company, and was built by the last named corporation, the same being opened for public travel in November of the same year.


Flint & Pere Marquette
RAILROAD
GEORGIAN BAY
LAKE HURON
Great Manitoulin I.
LAKE MICHIGAN
LAKE ERIE
MICHIGAN
CANADA
WISCONSIN
ILLINOIS
INDIANA
OHIO
SAGINAW BAY
Mackinaw City
Cheboygan
Alpena
Petoskey
Charlevoix
Traverse City
Cadillac
Manistee
Ludington
Muskegon
Grand Haven
Grand Rapids
Lansing
Jackson
Ann Arbor
Kalamazoo
Saginaw
Bay City
Flint
Port Huron
Sarnia
Detroit
Toledo
Monroe
Cleveland
Buffalo
Toronto
Hamilton
London
Chatham
Stratford
Woodstock
St. Thomas
Collingwood
Goderich
Dunkirk
Erie
Milwaukee
Racine
Kenosha
Waukegan
Chicago
Sheboygan
Manitowoc
Green Bay
Escanaba
Sturgeon Bay
Kewaunee
South Bend
Benton Harbor
St. Joseph
Toledo
Defiance
Bowling Green
Elyria
Sandusky
Harbor Springs
Gaylord
Grayling
Roscommon
West Branch
Gladwin
Clare
Midland
Mt. Pleasant
Reed City
Baldwin
Big Rapids
Ionia
Owosso
Holly
Pontiac
Wayne
Plymouth
Hart
Pentwater
Shelby
Hastings
Charlotte
Hillsdale
Coldwater
Adrian
Joliet
Knox
Albion
Angola
Goshen
La Grange
Wauseon
Chilton
Oconto
Menominee
Marinette
Shawano
Painesville
Chardon
Meadville
Warren
Corry
Jamestown
Titusville
Port Stanley
Port Colborne
Niagara Falls
Lewiston
Wingham
Clinton
Kincardine
Barrie
Orangeville
Port Whitby
Guelph
Paris
Dundas
Tilsonburg
Port Burwell
Thamesville
Essex Centre
Windsor
Mt. Clemens
St. Clair
Howell
Brighton
Fenton
Holland
Allegan
Cassopolis
Three Rivers
Sturgis
Marshall
Battle Creek
Frankfort
Benzonia
Elk Rapids
Kalkaska
Onaway
Rogers City
Tawas City
East Tawas
Au Sable
Oscoda
Harrisville
Bad Axe
Sand Beach
Port Hope
Caseville
Sebewaing
Vassar
Cass City
Lapeer
Imlay City
Oxford
Orion
Milford
Northville
Romulus
Dundee
Bay View
Port Huron

TAKE THE

ANN ARBOR ROUTE

Toledo, Ann Arbor & North Michigan R'y,

WHEN YOU ARE GOING ANYWHERE.

ITS FEATURES ARE

Good Service, Close Connections, Quick Time, and Shorter Line than any other

TO

ANN ARBOR, TOLEDO AND OTHER IMPORTANT CITIES.

City Ticket Office, Genesee Ave. Depot, Cor. Washington Ave. and Thompson St.

A. J. PAISLEY, H. B. ORBISON,
Gen'l Pass. Agent. *Ticket Agent.*

TIMOTHY E. TARSNEY. GEORGE W. WEADOCK.

TARSNEY & WEADOCK,

ATTORNEYS AT LAW.

EAST SAGINAW, MICH.

MILLER & LEWIS,

MANUFACTURERS OF AND DEALERS IN

Rough and Dressed Lumber, Lath and Shingles.

CAR LOTS A SPECIALTY.

Mills and Yards on
Water Street, Foot of 32nd.

BAY CITY, MICHIGAN.

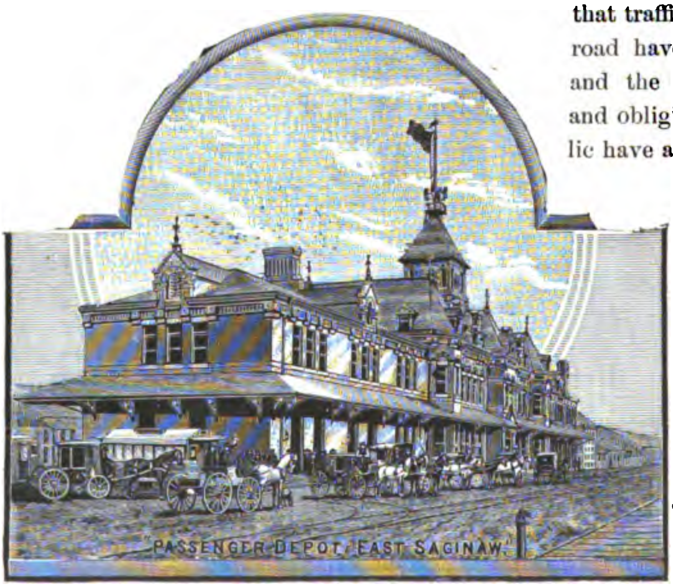
In 1871 an arrangement was made with the Holly, Wayne & Monroe company, by which the Flint & Pere Marquette Company undertook to complete the construction of the road and to operate it; and under this arrangement the road was completed through to Monroe during the winter of 1871-2. Various branches were built by the Flint & Pere Marquette Company from time to time, and opened for public use, all of which have since been consolidated with the main line. The company owns and operates at the present time track as follows:

	Miles.
Main line, extending from Monroe to Ludington	253
Manistee Branch	27
Star Lake Branch	9
Harrison Branch	32
Mt. Pleasant Branch	15
Coleman Branch	8
Bay City Branch	13
West Side Spur, north and south (on west side of Saginaw River)	4
Belt Line Branch (in Saginaw and East Saginaw)	13
Flint River Branch	20
Total	394

In addition to this, the company has 86 miles of spur tracks for business in the lumber districts, and has also 131 miles of sidings; making an aggregate mileage:

Main line and branches	394
Spur tracks	86
Sidings	131
Total	611

This company has developed a very large traffic from the west and northwest across Lake Michigan, and has now four steamers, built especially for the business, engaged in that traffic. The equipments of the road have always been first-class, and the management considerate and obliging—facts which the public have appreciated—and the Flint & Pere Marquette has ever been a favorite with the community. The increase in its business is shown by a comparison of its receipts. During the year 1864 it carried 93,733 passengers, for which it received $71,011.09. Its freight receipts for the same year were $43,342.68; making the total earnings $114,353.77. During the year 1874—10 years later—it carried 465,518 passengers, for which it received $381,851.61, and during the same year its freight receipts were $600,358.93, making with express and mail its total earn-


PASSENGER DEPOT, EAST SAGINAW.

ings over $1,000,000. The number of passengers carried and the earnings for 1884 and 1888 are shown in the following table:

	1884.	1888. Approximate.
Passengers carried	882,659	1,000.000
Passenger earnings	$ 795,818 73	$ 804,568 48
Freight earnings	1,457,169 28	1,595,787 71
Total earnings	$2,252,988 01	$2,400,356 19

The general offices and shops of the company are located at East Saginaw, and it has in its employ an average of 2,000 men. At East Saginaw it has the finest passenger station in the State, outside of Detroit.

The Flint & Pere Marquette is officered as follows:

President—W. W. Crapo, New Bedford, Massachusetts.
Assistant General Manager—D. Edwards, East Saginaw.
Superintendent—Sanford Keeler, East Saginaw.
Assistant Superintendent—W. F. Potter, East Saginaw.
General Freight Agent—A. Patriarche, East Saginaw.
Auditor—G. W. Ledlie, East Saginaw.
Solicitor—W. L. Webber, East Saginaw.
General Baggage Agent—L. H. Plues, East Saginaw.

THE MICHIGAN CENTRAL.

The Michigan Central is one of the most important lines passing through and doing business in the Saginaws. It is the great artery of the trade and travel through which pulsates the commercial life of the state. Chartered in 1832, when the population numbered but 40,000 and Detroit was little more than a village, it has exerted an influence in the upbuilding of the State and the development of its rich resources not to be computed. Sharing in the early struggles and in the financial reverses of the people, it has made possible the wealth and prosperity that now exists. It has grown with the population and fortunes of the state, that has always taken a just pride in it, until now it is not only "The Great East and West Highway," wearing its well-earned title of "The Niagara Falls Route," but it is more than ever the MICHIGAN CENTRAL, with its lines of steel rails running from Detroit, the metropolis and its focal point, eastward to Buffalo, south to Toledo, west to Chicago and Grand Rapids and north to the Saginaws, Bay City and Mackinaw, while its branches and connections permeate both peninsulas, a network of life-sustaining veins. Leaving out two towns with which it has close connections, it runs its cars to the eleven largest cities of the State, having an aggregate population of more than 327,000. It traverses rich agricultural and timber lands of the State, the great factories of the State are on its lines and it is the great outlet of its fruit, salt and coal regions, as well as of the Upper Peninsula with its marvelous stores of mineral wealth. The Mackinaw Division is the direct line to the Northern Peninsula; to Mackinac, the tourist's paradise, the gem of the Great Lakes, reserved by Congress as a National park; to Topinabee, the great resort of hay fever sufferers; to the lake ports of Cheboygan and Mackinaw City, from which steamers run to Manistique, Sault St. Marie and other points of interest; through the great pine forests that fill the air with healing balsamic odors; to Grayling, Roscommon and other places on the brawling streams whose cold clear waters are filled with speckled brook trout and grayling, the princes of piscatorial prizes. An admirable system of through cars and close connections has placed this remarkable region within easy reach of Boston, New York, Philadelphia, Cincinnati, Louisville, Chicago and St. Louis.

The Saginaw division of the Michigan Central has its termini at Jackson and Bay City, connecting at the former city with the main line and at Bay City with the Mackinaw division. This division was formerly the Jackson, Lansing & Saginaw Railroad. During the summer of 1864 a company was organized to build a railroad from Jackson to Lansing, and the following year the enterprise was completed. A line of road known as the Amboy, Lansing & Traverse bay railroad, which was in operation between Lansing and Owosso was purchased, and trains from Jackson to Owosso began running. Surveys for the continuation of the line northward were commenced June 4, 1866, and carried on, and a year later, regular trains were running between Jackson and West Bay City, then Wenona. Three years later, 1870, the construction of the road northward was begun, and by January 1, 1872, 40 miles were completed. A short time before this, September 1871, the Jackson, Lansing & Saginaw railroad passed into the management of the Michigan Central under a lease for 99 years. The Michigan Central at once prepared to push it through to the straits of Mackinaw and did so, as rapidly as possible, running trains from Bay City to Mackinaw City. The extension of the road from Saginaw to Wenona was brought about through the efforts of Sage, McGraw & Co. and D. H. Fitzhugh, who proposed to the Jackson, Lansing & Saginaw company that they would construct the roadbed, build the bridges and furnish the ties for the distance between the two places, and contract to complete the same within 12 months for $80,000 in paid stock of the road. This was in the fall of 1866. The offer was accepted and trains began running in December 1867. The event of opening the road from Jackson to Wenona was celebrated with a grand excursion.

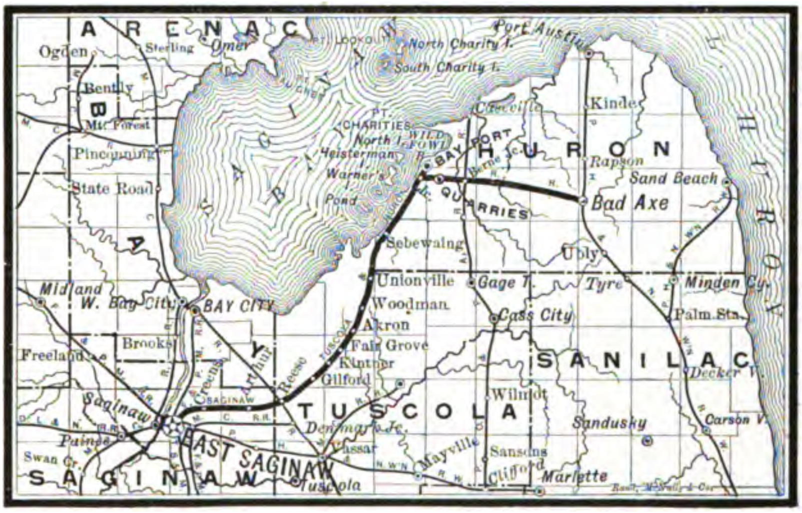
The Detroit & Bay City road, now a division bearing the same name and running from Saginaw and Bay City to Detroit, was projected in 1871 and put in operation two years later. Coming north the main portion of the division ends at Vassar where trains, passenger and freight, connect by short lines with the Valley cities.

The officers of the Michigan Central are as follows:

President and General Manager—H. B. Ledyard, Detroit.
General Superintendent—E. C. Brown, Detroit.
Assistant General Superintendent—Robt. Miller, Detroit.
General Passenger and Ticket Agent—O. W. Ruggles, Chicago.
Assistant General Passenger Agent—Geo. E. King, Chicago.
Auditor—D. A. Waterman, Detroit.
General Freight Agent—A. Mackay, Detroit.
Assistant General Freight Agent—C. J. Hupp, Detroit.
Assistant General Freight Agent—A. W. Street, Chicago.
Assistant General Freight Agent—W. L. Benham, Bay City.
General Baggage Agent—H. P. Dearing, Chicago.

SAGINAW, TUSCOLA & HURON.

The Saginaw, Tuscola & Huron railroad company was organized February 24, 1881, to build a 3-foot gauge railroad from East Saginaw northeasterly to Bad Axe, the county seat of Huron county. Jesse Hoyt, of New York, was the prime mover in the enterprise, and without his encouragement and capital the road would not have been built. It was opened to Sebewaing in April 1882, to Bay Port and Bay Port quarries in 1884 and extended to Bad Axe in 1886. At East Saginaw it occupies the same yard and station grounds with the Flint & Pere Marquette railroad. At Reese it crosses the Michigan Central railroad; at Berne Junction it crosses the Pontiac, Oxford & Port Austin railroad, and at Bad Axe it connects with the Port Huron & Northwestern railway. Between Sebewaing and Bad Axe it was constructed, practically, through a wilderness, but since its construction the country has developed rapidly.



The limekilns and building stone at the Bay Port quarries furnish a large amount of business for the road.

During the year 1888 there were taken from the quarry over 3,000 cords of stone, for various uses, in addition to which there were over 5,000 cubic yards of stone crushed for use in MacAdam roads. Over 30,000 bushels of lime were made and sold from the quarry during the same year. The lime from this quarry is of excellent quality. In character it resembles the Petoskey lime, absorbing a large quantity of water in slaking, and being more of the nature of cement it its composition, than the ordinary Ohio limes.

The summer resort at Bay Port, where the Bay Port hotel, with accommodations for 300 guests, has been erected, has largely increased the passenger traffic.

Herewith is given a cut of the hotel at Bay Port, on Wild Fowl Bay.

WEINHARDT ENG. Co. CHI.

A cut showing the line of the road from East Saginaw to Bad Axe is also given in connection with this sketch. The officers of the road are as here named:

President—W. L. Webber, East Saginaw.
Treasurer—E. T. Judd, East Saginaw.
Auditor– C. M. Rice, East Saginaw.
Superintendent –Robert Laughlin, East Saginaw.

DETROIT, LANSING & NORTHERN.

The Saginaw Valley & St. Louis railroad, now a portion of the Detroit, Lansing & Northern system, was surveyed in June 1871 by Frank Eastman. In September of the same year a contract for grading, etc., was awarded. September 15, 1872 the first spike was driven and three months later a train passed over the line from Saginaw to St. Louis, the termini of the road. The line, 35 miles in length, was formally opened December 31. It was subsequently extended to Edmore and a branch was built to Ithaca, the line being run as an independent system until the Detroit, Lansing & Northern took control and managed it. In 1885 the road was continued to Howard City and now forms a direct route between Grand Rapids and the Saginaws. The officers of the Detroit, Lansing & Northern are:

General Manager—J. B. Mulliken, Detroit.
Traffic Manager—W. A. Carpenter, Detroit.
General Superintendent—T. M. Fish, Ionia.
Superintendent Motive Power and Rolling Stock—G. C. Watrous, Ionia.
Assistant Treasurer—J. E. Howard, Detroit.
General Accountant and General Ticket Agent—J. F. Reekie, Detroit.
Assistant General Freight Agent—E. F. Baker, Detroit.
General Baggage Agent—T. S. Newton, Detroit.
Purchasing Agent—Allan Bourn, Detroit.

PORT HURON & NORTHWESTERN.

This road was opened to traffic between Port Huron and East Saginaw February 17, 1882, and since that time a number of valuable branches have been added, and the road now covers 218 miles of main line and branches with 12 83 miles of sidings, including the main line from Port Huron to East Saginaw, 91 miles; Sand Beach to Saginaw Junction, 58.25 miles; Port Austin to Palms, 35 miles; and Almont to Port Huron, 33.85 miles. The present gauge of the road is three feet. This road, which connects Saginaw with an extensive territory of great importance to it, will April 1, 1889, pass into the hands of the Flint & Pere Marquette Railroad Company. As a part of the plans in connection with thistransfer, it is contemplated to change the gauge of the road to standard upon its main line from Port Huron to the Saginaws. The importance of this acquisition to the Flint & Pere Marquette is made manifest by a glance at the map. It will give to the Flint & Pere Marquette a direct line across Michigan from Ludington and Manistee on Lake Michigan to Port Huron, where the connection with the Grand Trunk system will give the Saginaws the most direct route to the eastern seaboard, shortening the distance from Minneapolis and other northwestern points to the East by about 65 miles as against any other road. The value of this connection will be further enhanced upon the completion of the tunnel now being constructed under the St. Clair River at Port Huron. The Port Huron & Northwestern is now managed by the following named officers:

General Manager—Henry McMorran, Port Huron.
Superintendent—I. R. Wadsworth, Port Huron.
Assistant General Freight and Passenger Agent—George Bent, Port Huron.

TOLEDO, SAGINAW & MACKINAW.

The youngest of the railroad family of the Saginaws, is the Toledo, Saginaw & Mackinaw, built between East Saginaw and Durand, a distance of 39 miles, by a half dozen public spirited and wealthy gentlemen residents of East Saginaw and Saginaw City. The company owns excellent terminal facilities in the Saginaws, and at Durand the line connects with the Detroit, Grand Haven & Milwaukee, the Chicago & Grand Trunk and the Toledo, Ann Arbor & North Michigan, of which latter system it is now a part and is operated under the name of that company, which in 1888 acquired a lease of two years. It is a broad guage line and will form an important feeder to the commercial and railway interests of this place. The officers of the Toledo, Saginaw & Mackinaw are:

President—A. W. Wright, Alma.
Vice-President—P. H. Ketcham.
Treasurer—W. R. Burt.
Secretary—W. C. McClure.

These gentlemen, however, take no part in the management, which devolves on the Toledo, Ann Arbor & North Michigan, the officers of which are as follows:

President—Jas. Ashley, Toledo.

Vice-President and General Manager—H. W. Ashley, Toledo.

Treasurer—B. F. Jervis, Toledo.

General Passenger and Ticket Agent—A. J. Paisley, Toledo.

Auditor—Geo. B. Parke, Toledo.

General Freight Agent—W. H. Bennett, Toledo.

The Toledo, Ann Arbor & North Michigan, which by leasing the Toledo, Saginaw & Mackinaw secured a strong foothold in the Saginaws, is a comparatively new road but controls over 300 miles of line.

The Toledo, Saginaw & Mackinaw will be extended north to Bay City in 1889 and ultimately to the Straits of Mackinac.

SHIP BUILDING INDUSTRY.

THE Saginaw River is one of the most advantageous points for the ship building industry on the great "unsalted" seas. The oak, pine and other timber utilized in the construction of ships exists in vast quantities along the streams tributary to the Saginaw, and there is none of superior quality to be found on the continent. While much has been accomplished in the shipbuilding industry, with the limitless resources there is ample field for wide development in the future.

The first craft constructed on the Saginaw River was the Buena Vista, a stern wheeler, in 1849, and from that period to 1864 a total of 22,000 tons had been put afloat. In 1867, twenty-one craft of various descriptions were built on the river, having an aggregate tonnage of 4,432 tons. In 1868 thirteen craft with a tonnage of 1,608 tons were launched. In 1869 twelve craft were built, aggregating 1,820 tons. In 1870 nineteen vessels were built with a tonnage of 2,345 tons. In 1871 nine vessels were built on the river with a measurement of 1,591 tons. In 1872 eleven vessels of 2,834 tons were turned out. In 1873 there were twenty-three craft launched, with a measurement of 1,603.54 tons. There were turned out early in 1874 one propeller, one bark, four barges and one schooner, having a measurement of about 3,500 tons. The stagnation in all branches of business immediately following the panic, caused a partial suspension of ship building and comparatively little was done until 1879, when several fine craft were put afloat. During 1879-80 a number of craft were constructed, and since that year the business received a new impetus and has been prosecuted vigorously. In every

ALEX. HURTUBISE.
BEST SLEIGHS
IN THE WORLD
SAGINAW, MICH.
16,474
THE HORSE
FRIEND.
TO DINNER.
C.F. BOERSCH
SAG

BIALY & McDONELL,

JOBBERS OF

HARDWARE, * STOVES,

MILL, LUMBERMEN'S and BOAT SUPPLIES.

MANUFACTURERS OF

SHINGLE, ◆ STAVE ◆ AND ◆ HEADING ◆ BANDS.

We carry a full stock of Leather and Rubber Belt, Hose, Packing, Lace Leather, Rope, Lath Yarn, Chain, Chain Dogs, Circular Saws, Tackle Blocks, Paints, Oils, Glass, Babbitt Metal, Machinery and Implements, Bar Iron, Nails, Steel, Sheet Iron, Gas Pipe, Brass Goods and Fittings.

We pay special attention to the wants of Lumbermen and Contractors.

BAY CITY, - - MICH.

1001, 1003 Water St. 1, 2, 3, 4, Fourth St.

The "SOO" Railway Company

ASKS YOU TO

READ THE FOLLOWING:

Parties owning saw mills where timber is nearly exhausted are solicited to examine the chances on the "Soo" line. To those desiring to erect mills this Company will undertake:

I. To give, as far as possible, information as to location, quality, and prices of various groups of pine and other timber adjacent or tributary to its line.

II. To transport free of charge all machinery and appliances for mills to be erected on its line.

III. To haul to any mill sending its manufactured products to market over this route, saw logs from a distance of twenty-five miles or less, on either side, at a low rate per car, thus enabling mills to secure logs as cheaply as if within hauling distance by teams.

IV. For owners of small mills, having a capacity of from 15,000 to 25,000 daily, who are unable to buy large tracts of timber, special efforts will be made to secure suitable sites near small bodies of timber, or where birch, maple and hemlock timber can be secured at a low price; and also to assist them, if necessary, to find a market for their cut. Within the last three years quite a large quantity of hemlock has been marketed in St. Paul and Minneapolis, and used in building, and the demand will increase.

V. To send competent men to show mill sites, and give necessary information as to roads, streams, etc.

VI. To make rates reasonable, and as low as possible, consistent with the rights of stockholders; and guarantee good facilities and prompt service.

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W. W. RICH,

"Soo" Railway, Minneapolis, Minn.

branch of trade—the coal, the grain, the iron, the lumber,—are to be found the leviathans whose keels were laid and whose forms were moulded by shipbuilders on this river. Lying almost adjacent to the wide expanse of hard timber lands, and railroads penetrating the pine and norway forests, material is laid at our doors at all seasons of the year, enabling the prosecution of the business to its capacity and furnishing steady employment to hundreds of hands the year round.

One of the largest, most completely equipped, and prominent of the ship-building industries along the chain of lakes, from Duluth to Buffalo, is owned and managed by Captain James Davidson. His plant, embracing dry docks, yards, etc., is located in West Bay City, at a point southeast of the engine house of the Michigan Central Railroad, and occupies a very large area of territory.

Early in 1888 he finished what was quoted as the "most complete ship mill in the United States." It was 49x157 feet in dimensions, supplied with the latest improved machinery for working heavy timber, improved punches for heavy iron work, etc., and otherwise furnished for turning out his product. These premises were destroyed by fire in August of the same year, without, however, having the effect of causing even a temporary suspension of work. Contracts were immediately concluded, and the premises rebuilt and furnished with additional tools and appliances to meet the steadily increasing demand made upon the resources of the establishment.

No industrial establishment in the Saginaw Valley surpasses in its equipment or career of honorable success the ship-building industry of F. W. Wheeler, in West Bay City. It stands second to none in its special line, around the lakes, and occupies a prominent position among the manufacturing industries of the country. It was established by Mr. Wheeler in 1879.

The plant, including the yards, mill, dry docks, machine and blacksmith shops, with other buildings of utility and necessity, is comprehended within an area of territory forty acres in extent, and furnished with all requisite appliances, and he has constructed some of the largest craft on the lakes.

At East Saginaw Capt. Chesley Wheeler established a yard late in 1888, and Carkin, Stickney & Cram also operate a small yard.

GEO. W. HILL, STATE SALT INSPECTOR.

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